Tourists still crowding overseas

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BUSINESS WEEK

A McGRAW-HILL PUBLICATION FIFTY CENTS MAY 10, 1958



R. Buckminster Fuller: From high brow theory, low cost structures.
(Page 112)

E B POWER
UNIVERSITY MICROFILMS
313 W 1ST ST
ANN ARBOR MICH
C E

There's no "love" in this game

TURF INSECTS give no quarter when they set their choppers chewing on your grass. But they'd better change their diet if they plan to reach old age. Shell Chemical now makes the lawns strike back.

Long-lasting *dieldrin*, made by Shell Chemical, now effectively protects the turf in lawns, parks, and fairways against the ravages of grass-killing insects.

Easy to apply, this potent insecticide provides effective control for weeks against lawn foliage wreckers such as cutworms and lawn moths. And dieldrin protects turf *for years* against root-destroying soil insects such as white grubs, wireworms, and Japanese beetle grubs. Even ticks, chiggers, fleas and ants living in the grass are destroyed by dieldrin.

Developing this use of dieldrin to protect landscaping from insect damage is another important service Shell Chemical renders to help make modern living more comfortable and pleasant.



Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

NEW YORK

SHELL

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NUMBER 1497

FIGURES OF THE WEEK



	1946 Average	Year Ago	Month Ago	Week Ago	§ Latest Week
BUSINESS WEEK INDEX (chart)	**91.6**	**142.7**	**122.5**	**†120.0**	***121.0**
PRODUCTION					
Steel ingot (thous. of tons)	1,281	2,220	1,308	†1,289	**1,350**
Automobiles and trucks	62,880	155,911	87,870	†83,823	**106,838**
Engineering const. awards (Eng. News-Rec. 4-wk daily av. in thous.)	$17,083	$70,642	$66,901	$61,268	**$62,350**
Electric power (millions of kilowatt-hours)	4,238	11,286	11,326	11,206	**11,251**
Crude oil and condensate (daily av., thous. of bbls.)	4,751	7,529	6,250	6,288	**6,227**
Bituminous coal (daily av., thous. of tons)	1,745	1,662	1,215	†1,180	**1,133**
Paperboard (tons)	167,269	272,124	279,404	236,328	**246,385**
TRADE					
Carloadings: mfrs., miscellaneous and l.c.l. (daily av., thous. of cars)	82	66	54	55	**55**
Carloadings: all others (daily av., thous. of cars)	53	49	35	34	**33**
Department store sales index (1947-49 = 100, not seasonally adjusted)	90	†131	†122	†125	**136**
Business failures (Dun & Bradstreet, number)	22	297	352	329	**336**
PRICES					
Spot commodities, daily index (Moody's, Dec. 31, 1931 = 100)	311.9	408.1	394.8	389.7	**391.8**
Industrial raw materials, daily index (BLS, 1947-49 = 100)	††73.2	92.9	80.8	80.3	**80.3**
Foodstuffs, daily index (BLS, 1947-49 = 100)	††75.4	81.8	90.2	89.8	**90.1**
Print cloth (spot and nearby, yd.)	17.5¢	17.8¢	17.2¢	17.1¢	**17.2¢**
Finished steel, index (BLS, 1947-49 = 100)	††76.4	174.5	181.6	181.6	**181.6**
Scrap steel composite (Iron Age, ton)	$20.27	$44.17	$33.50	$31.50	**$32.00**
Copper (electrolytic, delivered price, E & MJ, lb.)	14.045¢	31.890¢	24.870¢	24.565¢	**24.795¢**
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	$1.97	$2.23	$2.33	$2.22	**$2.25**
Cotton, daily price (middling, 1 in., 14 designated markets, lb.)	**30.56¢	33.90¢	34.55¢	34.65¢	**34.66¢**
Wool tops (Boston, lb.)	$1.51	$2.18	$1.65	$1.65	**$1.60**
FINANCE					
500 stocks composite, price index (S&P's, 1941-43 = 10)	17.08	46.29	41.52	43.23	**43.79**
Medium grade corporate bond yield (Baa issues, Moody's)	3.05%	4.48%	4.67%	4.66%	**4.64%**
Prime commercial paper, 4 to 6 months, N. Y. City (prevailing rate)	¾–1%	3⅝%	2⅛%	1¾%	**1¾%**
BANKING (Millions of Dollars)					
Demand deposits adjusted, reporting member banks	††45,820	56,213	54,119	56,361	**55,692**
Total loans and investments, reporting member banks	††71,916	87,129	89,541	92,052	**92,470**
Commercial and agricultural loans, reporting member banks	††9,299	31,450	30,842	30,252	**30,174**
U. S. gov't guaranteed obligations held, reporting member banks	††49,879	26,034	28,113	30,107	**30,548**
Total federal reserve credit outstanding	23,888	25,093	24,586	24,854	**24,566**

MONTHLY FIGURES OF THE WEEK		1946 Average	Year Ago	Month Ago	Latest Month
Private expenditures for new construction (in millions)	**April**	$803	$2,603	$2,410	**$2,563**
Public expenditures for new construction (in millions)	**April**	$197	$1,054	$928	**$1,103**
Wholesalers' inventories (seasonally adjusted, in billions)	**March**	$5.5	$12.8	$12.5	**$12.4**
Retailers inventories (seasonally adjusted, in billions)	**March**	$9.8	$23.7	$24.3	**$24.1**
Consumer credit outstanding (in millions)	**March**	$6,704	$40,735	$43,043	**$42,562**
Installment credit outstanding (in millions)	**March**	$3,174	$31,524	$33,302	**$32,983**
Imports (in millions)	**February**	$412	$993	$1,095	**$962**

* *Preliminary, week ended May 3, 1958.* † *Revised.* †† *Estimate.* ** *Ten designated markets, middling ⅞ in.* § *Date for 'Latest Week' on each series on request.*

THE PICTURES—Cover—Leonard Nadel; 29 (top)—Grant Compton, (bot.) Robert Phillips; 30, 31, 32—Noel Clark; 34—W.W., 47—du Pont, 72, 73—Bob Launois; 112, 124—Ivan Massar.

B.F.Goodrich



Hose takes sardines on a short-cut to the cannery

Problem: Sardine fishermen had to haul those heavy nets over the side by hand and then shovel the fish into the boat. That took time and heavy work, and damaged a lot of fish.

One New England canner looked for a way to get his catch back to the docks faster, and without waste. He wondered if fish could be taken aboard by hose, as petroleum is.

What was done: B.F.Goodrich engineers studied the problem and suggested a flexible suction hose that is light, yet will not collapse. It can be handled easily by one man. Using this hose like a vacuum cleaner, fishermen can suck the sardines aboard in a stream of water at a ton-a-minute clip.

Savings: This B.F.Goodrich hose cuts loading time in half, gets fish to the cannery faster and fresher. Boats are able to make more runs out to sea in a season, get more fish—the fisherman and canner make more profit.

Extra benefits: Because this B.F. Goodrich hose is lined with soft rubber, thin-skinned sardines can go through without becoming bruised. Fish reach the cannery in better condition. There's less spoilage.

Where to buy: Your B.F.Goodrich distributor has exact specifications for the B.F.Goodrich hose described here. And, as a factory-trained specialist in rubber products, he *can* answer your questions about *all* the rubber products B.F.Goodrich makes for industry. *B.F.Goodrich Industrial Products Co., Dept. M-332, Akron 18, Ohio.*

B.F.Goodrich *industrial products*



New 54,000 sq. ft. pole-type warehouse recently erected by The Dow Chemical Company, Midland, Michigan.

How to build a modern warehouse for $2.68 per sq. ft.

Dow saved about 50% of conventional construction cost by building this 380′ warehouse on Penta-treated poles.

The Dow Chemical Company uses this 380′ x 150′ warehouse for storage of calcium chloride and other packaged chemicals. The 54,000 sq. ft. building is one of six Dow has erected on Penta-treated poles. The completed cost was $2.68 per sq. ft.—approximately half what the same building would cost if built by conventional methods. The completed cost included a built-up flat roof of Douglas Fir Plywood, aluminum siding, reinforced concrete floor, sprinkler system and lighting, truck and railroad loading docks.

PENTA*-TREATED POLE BUILDINGS are strong, wind-resistant, flexible and practical. Penta keeps rot and termites out of poles, leaves them clean and easy to handle. For more facts and photos of pole buildings, return the handy coupon today. THE DOW CHEMICAL COMPANY, Midland, Michigan.

*PENTAchlorophenol

THE DOW CHEMICAL COMPANY
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☐ Send me photographs and cost figures on 20 different types of pole buildings.

☐ Send me information on low-cost PENTA-treated pole buildings for this use:_____

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YOU CAN DEPEND ON DOW

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READERS REPORT

Industrial Design

Dear Sir:

I want to compliment you on giving sense and cohesion to a subject that seemed to lack these qualities two weeks ago [BW—Apr.12'58, p110].

I draw the impression from reading your piece that you consider the industrial design profession to be a vital force in the market place today and you help to define its own important niche.

Your article is required reading within our organization. We think the entire staff should know what a student of our field believes we represent.

WILLIAM T. SNAITH
PRESIDENT
THE RAYMOND LOEWY CORP.
NEW YORK, N. Y.

Dear Sir:

My enjoyment in reading your interesting depth story on industrial designers, Designers Who Sell Change, was marred by the omission, in the portion of the story dealing with planned obsolescence, of reference to the person who quite probably originated the current objection to artificial obsolescence and, if not, certainly has given it great impetus, especially in the appliance field.

I refer to Fred Maytag II, president of The Maytag Co. . . . I am not aware of any previously published material so directly attacking this philosophy. Several of the industrial designers now crusading against the concept of artificial obsolescence have quoted him in their remarks, directly or indirectly. . . .

ROBERT J. HOOVER
MANAGER, PUBLIC INFORMATION
THE MAYTAG CO.
NEWTON, IOWA

Dear Sir:

Congratulations on the best story on industrial design we have seen anywhere. It was well balanced, incisive and well written. . . .

STANLEY C. MARSHALL
PUBLIC RELATIONS DIV.
LANDO ADVERTISING AGENCY
PITTSBURGH, PA.

Dear Sir:

For industrial design to make the cover of BUSINESS WEEK is really an event. Your article on what we do and think and say is a fine bit of reporting which avoids the misinterpretations of our profession, which all too often still have a habit



Decentralize for efficiency or centralize for economy?

Johnson & Johnson does both and cuts costs with Bassick Casters

In their new North Brunswick, N. J. plant, Johnson & Johnson management wanted to combine all the cost advantages of centralization with all the efficiency of decentralization. They did it with an unusually complete materials-handling system and a healthy assist from Bassick sealed casters.

A 3600-ft. towline, with Bassick Caster-equipped trucks, links all manufacturing operations to shipping, delivers raw materials, carries away finished products. In the shipping center (below) a clerk at a central board uses additional 2000-ft. towlines to deliver pallet loads to the 12-truck loading docks or to storage. Sealed caster construction cuts maintenance, keeps grease drippings off the floor, insures long life and easy operation.

Materials-handling costs—about 30% of the average manufacturer's production costs, according to the experts—are one cost area open to reduction. Here's where Bassick factory representatives and your Bassick industrial distributor can help you. Call on us. THE BASSICK COMPANY, Bridgeport 5, Conn. In *Canada:* Belleville, Ont. B.17



HEAVY-DUTY BASSICK "S99" casters used in new J&J plant stand up under grueling power-pulled applications. Fully-sealed bearings keep grease in, dirt, water, debris out.



Bassick

SYMBOL OF EXCELLENCE

STEWART SW WARNER

of creeping into some sections of the press.

I suppose that I should perhaps not quibble about one error in an otherwise so-accurate coverage, but you see what I have reference to sort of hits me where it hurts most. I did not realize that I make such a celibate and monastic impression, and I am sure that my nine colleagues, on your pages 110 and 111, know only too well that this does not fit me.

Let me make you an offer: Would you let me buy back the plate from BUSINESS WEEK which continues to spell my name incorrectly? It is Munk, just like on this letterhead, and while you might reply "what's in a name?" I would come right back like a designer that "it's the details that count in products as well as signatures.". . .

PETER MULLER-MUNK
PETER MULLER-MUNK ASSOC.
PITTSBURGH, PA.

Dear Sir:

Congratulations on the very fine job you did on industrial designers. You welded a lot of information together in a most interesting fashion, and it seems to us with complete fairness. . . .

WALTER DORWIN TEAGUE
WALTER DORWIN TEAGUE ASSOC.
NEW YORK, N. Y.

Dear Sir:

This weekend I read your article on Industrial Designers and I am full of admiration. It is a very difficult group to cover.

I liked the clean way you organized it; the sparkling, humorous effect you produced with the comparison of our different opinions.

I am sure that all of us are fascinated with your fresh, birds-eye view.

RUSSEL WRIGHT
RUSSEL WRIGHT, ASSOC.
INDUSTRIAL DESIGN
NEW YORK, N. Y.

Dear Sir:

. . . May I take this opportunity, both personally and as president of the American Society of Industrial Designers, to offer my congratulations to you and your staff for such an excellent presentation of our profession. It is much appreciated!

WILLIAM M. GOLDSMITH
DAVE CHAPMAN, INC., INDUSTRIAL DESIGN
CHICAGO, ILL.

Dear Sir:

Once again it is my pleasant task to congratulate you for a well-done piece on a difficult subject.

How you ever found your way amidst the labyrinth of our conflicting claims and points-of-view that characterize our profession, I don't know—but you did.

We want to compliment you particularly for your sensitive selection of featured designers. It is good to see BUSINESS WEEK give recognition to someone like Charles Eames. He may be "at the opposite end of the pole" from Lippincott & Margulies and other large design firms, but we welcome his position there. Society needs both the original artist, working on an individual basis, as well as organized design efforts like our own. Otherwise, that pole wouldn't be very well balanced.

Just for the record, I do not believe I did say that "our role used to be to make products better." I said, "It used to be only to make them look better. Now it's to try to make them sell better as well." Even if our firm is a large one, and devoted to the interests of our clients, we are not that cynical, and never will be, I hope. . . .

WALTER P. MARGULIES
LIPPINCOTT & MARGULIES, INC.
INDUSTRIAL DESIGNERS
NEW YORK, N. Y.

Dear Sir:

Just a line to say how pleased we were with the industrial design story. We were not only delighted with the generous treatment Henry Dreyfuss received, but with the substantial boost this gives to the design profession.

DONALD HOLDEN
HENRY DREYFUSS
NEW YORK, N. Y.

Dear Sir:

. . . The article on Industrial Design was a very interesting one and I think it should help the public gain a better understanding of our profession.

KIM YAMASAKI
DAVE CHAPMAN, INC., INDUSTRIAL DESIGN
CHICAGO, ILL.

Picture of Growth

Dear Sir:

Re: Cover [BW—Mar.8'58], the statement "Expanding population and insatiable demand have powered postwar growth (in terms of prosperity)" implies that mere want produces prosperity. What about India, China, etc. Absurd, isn't it?

H. T. DRAEGER
BERKELEY, CALIF.



Both these pilots work for YOU!

Every day, both of these pilots work for you—the jet aircraft pilot and the tiny pilot in your home or plant!

The companies which form the Dresser industrial team play an important role in supplying necessary services and equipment to help these pilots serve you. Dresser Manufacturing Division supplies parts for the engines in our faster-than-sound aircraft. All of the Dresser companies, active in the petroleum industry, team together to supply equipment and services that help to provide the specialized fuel demanded by today's high-performance aircraft.

The pilot flame—forming the heart of your kitchen range and other gas equipment for home and industry—is kept alive throughout America with the help of compressors from Clark Bros., couplings and fittings from Dresser Manufacturing, blowers and gas boosters from Roots-Connersville, and pumps from Pacific.

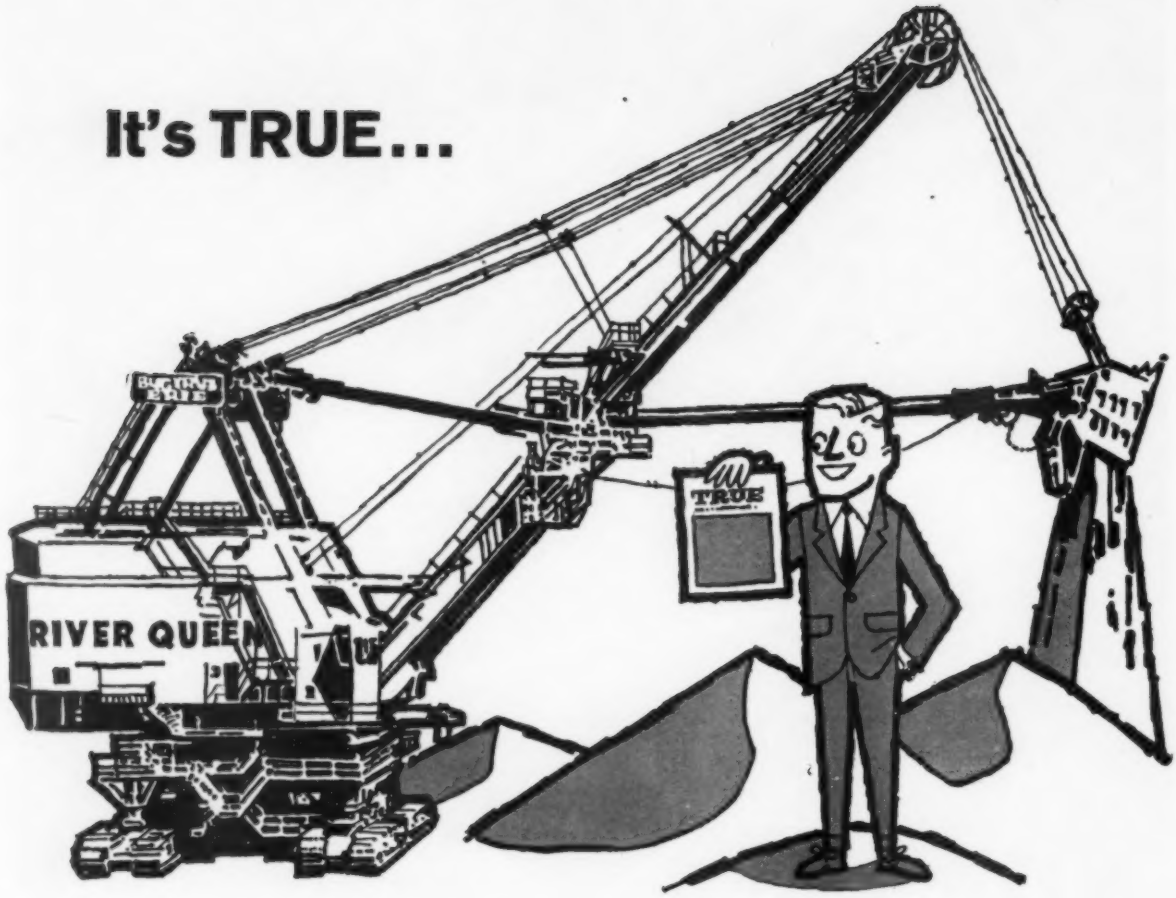
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These GIANTS move mountains!

Use the giant Bucyrus-Erie "River Queen" power shovel to scoop up over 80 tons of earth in a single bite... but if you want to move products and services sold to men, **get results with TRUE, the giant man's magazine.**

TRUE delivers America's largest all-male audience. **TRUE** puts your products **on the move** to 2¼ million men (guar. net paid circulation) on the move.

Your story reaches the men who reach for the brands and services they want. These action-minded customers look to TRUE for what's new in **man-to-man editing,** look in TRUE for what's news in men's products. A 2¼ million mass market for you—without the big mixed mass weekly price ticket. **You sell for less** to your best brand prospects: MEN. (But don't forget TRUE's big bonus of 1,200,000 women readers who cost you nothing... but never miss an issue of their men's favorite reading).

TRUE is on-the-grow...rocketing up in circulation (February issue gave advertisers a **whopping bonus circulation** of 400,000) and ad dollar revenue (up 33% first quarter of '58 over a year ago). There is only one young giant in the magazine field... **that's TRUE.**

MALE vs. FEMALE BUYING POWER

From automobiles to television sets—just name your product—the big brand decision is made by MEN. Just check the facts in TRUE's new reports made by Daniel Starch & Staff in consultation with the Advertising Research Foundation.

Find out who is really buying your product. Ask for the report on your category.

Air Conditioners • Air Travel • Automobiles
Beer • Business Shirts • Electric Shavers
Life Insurance • Liquor • Outboard Motors
Shaving Cream • Television Sets • Tires

AMERICA'S LARGEST SELLING MAN'S MAGAZINE

A FAWCETT PUBLICATION—Fawcett Bldg., New York





ENOUGH EXTRA STEEL EVERY 1½ HOURS TO BLANKET A GRIDIRON! THAT'S THE RESULT OF LATEST EXPANSION AT GRANITE CITY

More than 35 tons of cold rolled steel every hour and a half . . . enough to cover this 57,600 sq. ft. football field with cold rolled sheets . . . and it's all *additional* capacity!

To get it, Granite City Steel has just completely repowered its cold strip mill . . . added new electric motors that develop 18,700 h. p.... increased cold rolled output 30%!

This newest boost in capacity is an important step in Granite City Steel's *continuing* expansion program. And it has particular significance for manufacturers of household appliances, heating and air conditioning units, containers, farm implements and hundreds of other products fabricated from cold rolled sheets and coils.

Fast-growing steel production; new facilities to provide it; reliable and personalized district office service—three reasons you can continue to look to Granite City Steel Company for a dependable supply of quality carbon hot and cold rolled steel.

May we serve you *now?*

MIDDLE AMERICA'S DEPENDABLE SOURCE FOR:

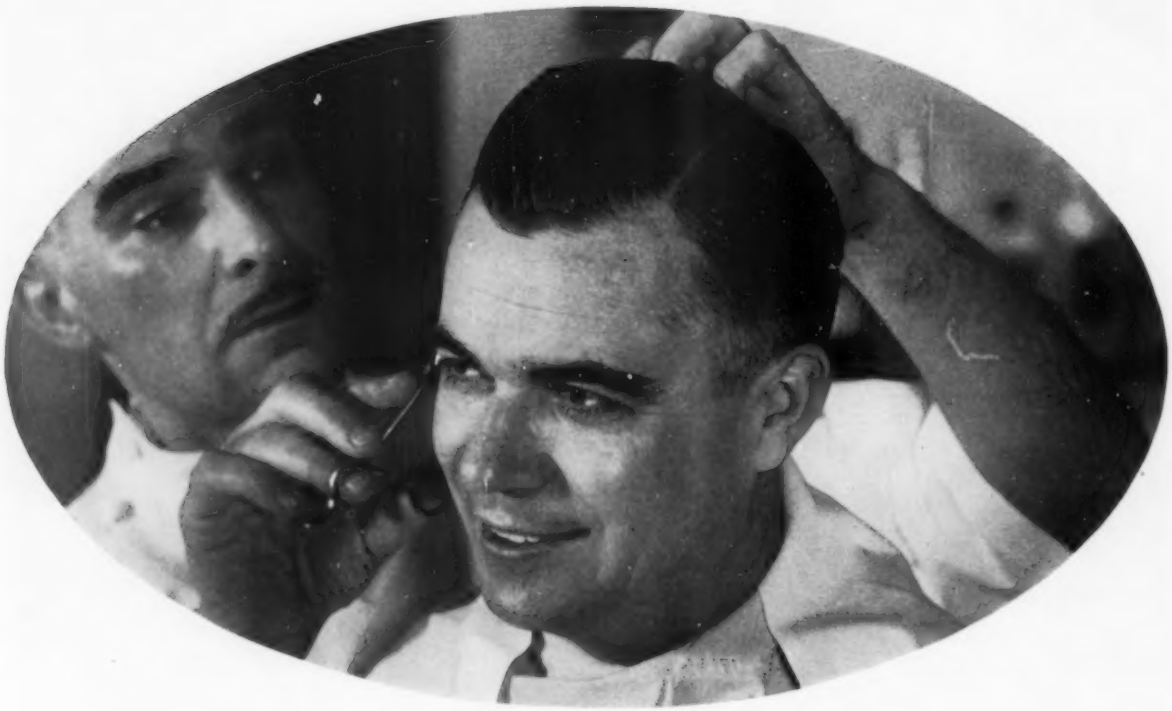
Ingots, Slabs and Plates • Hot and Cold Rolled Sheets • Porcelain Enameling Sheets • Electrical Sheets • Electrolytic Tin Plate • Strongbarn and Industrial High-Tensile Galvanized Corrugated Steel Roofing and Siding • Galvanized Culvert Sheets • Galvanized Flat Sheets.

SINCE GRANITE CITY STEEL 1878

GRANITE CITY STEEL CO.
GRANITE CITY, ILLINOIS

SALES OFFICES: Dallas • Memphis
Kansas City • St. Louis • Minneapolis
Houston • Tulsa

YOU'RE JUDGED BY your grooming



YOU'RE JUDGED BY your printing

A haircut is a casual thing which is taken for granted, but without it a man cannot make a well-groomed impression.

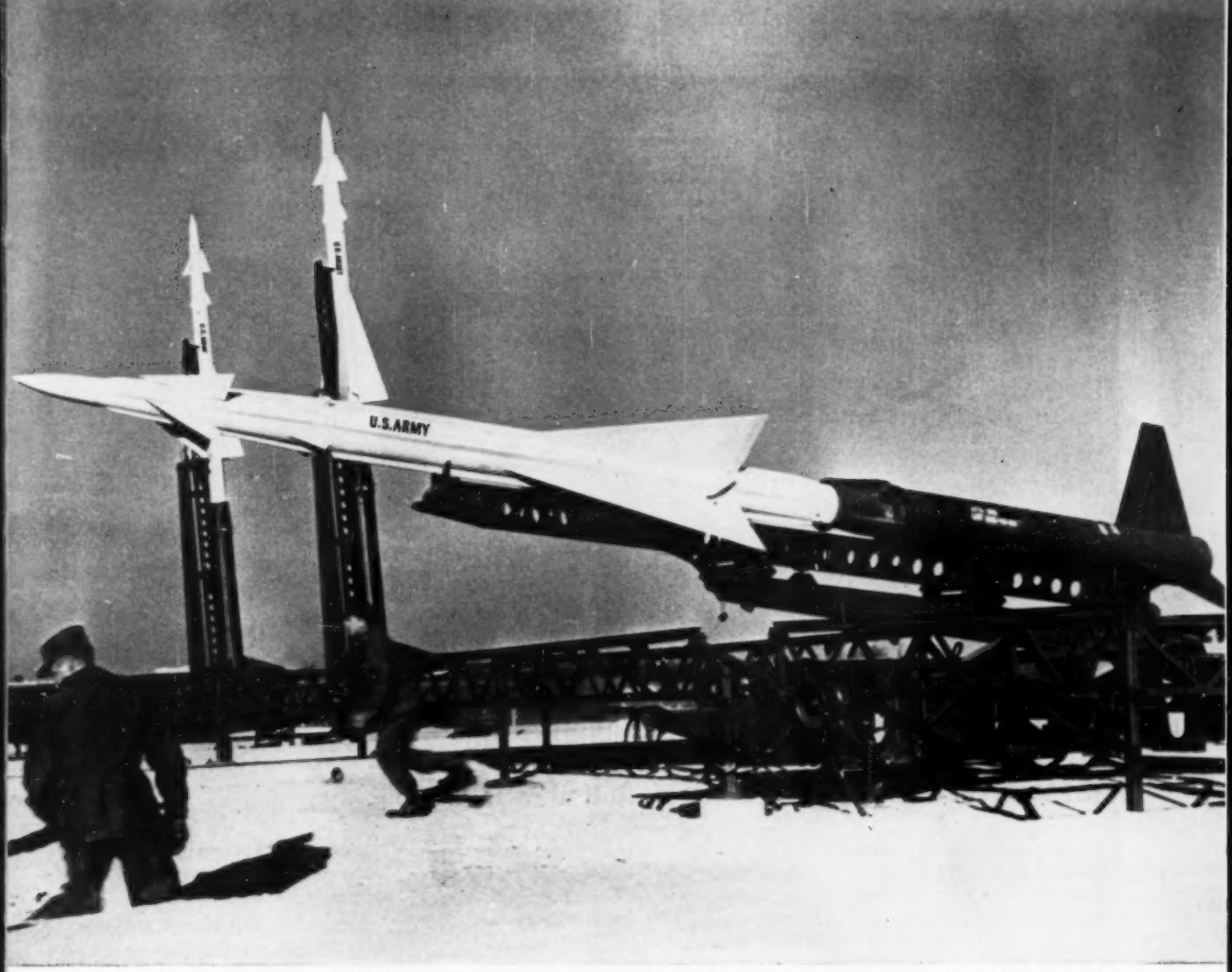
Many companies take their printed selling literature for granted too. In doing so, they risk making a poor impression on prospects and customers.

Don't take this chance. Make sure *your* booklets and brochures show brilliant color, faithful reproduction, pleasing appearance. They are your silent salesmen. If printed on quality paper, they demonstrate your respect for your prospects. And your prospects, in turn, will show respect for you.

Get GOOD printing . . . Get a GOOD printer. Fine printing can only be produced by an expert. Always consult an experienced printer at the *beginning* of a job. He can achieve distinctive printed pieces that win friends for your company and influence buying decisions in your favor. Most likely he'll recommend Warren's High Standard Printing Papers for your jobs. He knows that for fine printing results with economy, Warren papers are top quality and therefore trustworthy. *S. D. Warren Company, 89 Broad Street, Boston 1, Massachusetts.*

Warren's
HIGH STANDARD

printing papers make a good impression



U.S. Army personnel prepare to raise Nike guided missile to vertical firing position. (U.S. Army photo)

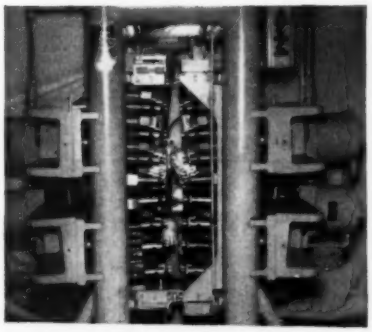
Keeping the Nikes Rolling Along

Relentless pursuer of enemy aircraft, the Nike-Ajax guided missile can intercept and destroy even the most evasive target. These missiles are our inner ring of defense for industrial, heavily populated and other strategic areas.

To assure a plentiful supply of Nikes, ultramodern production methods are used. The lower photograph shows one such method—a multiple drilling operation with Keller air drills at the Missile Division of Douglas Aircraft Company.

The machine illustrated prepares both sides of a Nike fin for fabrication. The Keller tools, in a special fixture, drill 108 holes and countersink them in two minutes. Drills advance and retract to preset tolerances; thus, the entire drilling operation is automatic.

Keller air tools, manufactured by Gardner-Denver, today help speed national defense—just as they enable industry to produce peacetime products at lower cost. Gardner-Denver Company, Quincy, Illinois.

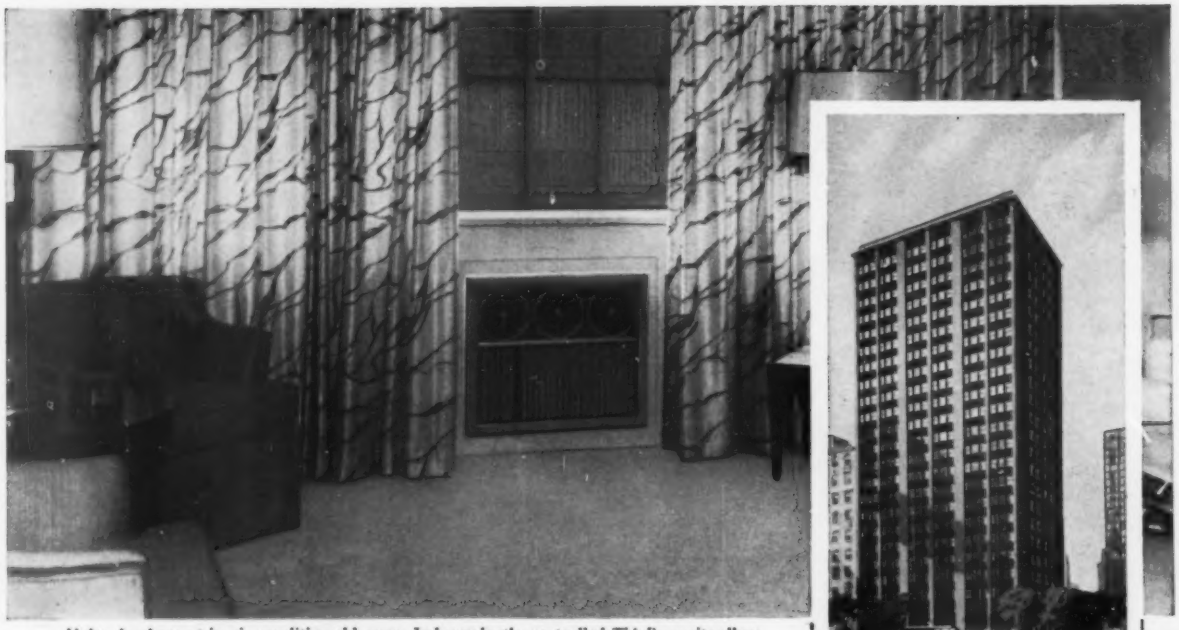


Holes being drilled in Nike fin with Keller air tools.

GARDNER-DENVER Since 1859

ENGINEERING FORESIGHT—PROVED ON THE JOB
IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING

GARDNER - DENVER



Living is pleasant in air conditioned luxury. Independently controlled *Thinline* units allow each resident to choose the temperature that suits him best.

This new apartment of curtain-wall construction is air conditioned throughout by General Electric *Thinline* air conditioners.

GENERAL ELECTRIC THINLINE AIR CONDITIONING INSTALLED IN CURTAIN WALLS OF CHICAGO APARTMENT

"**My air conditioning system** is 247 General Electric *Thinline* units," says Aaron B. Weiner, owner of the ultra-modern 23-story, 164-apartment building at 253 East Delaware Place in Chicago. "General Electric *Thinline* air conditioners seem to fit our plans exactly.

"Architecturally, *Thinline* units are easily installed in curtain-wall construction and look just as attractive outside as they do inside. From the management point of view, too, *Thinline* air conditioners are most desirable. Each unit can be controlled and serviced independently.

"And G-E *Thinline* air conditioners have great tenant appeal."

A General Electric *Thinline* air conditioning system can be tailored to your cooling needs, whatever they may be—for your private home, or throughout your office, hotel or apartment building. Units are available in models of from 5600 to 14,500 BTU* capacity.

See your General Electric representative for further details. General Electric Company, Appliance Park, Louisville 1, Kentucky.

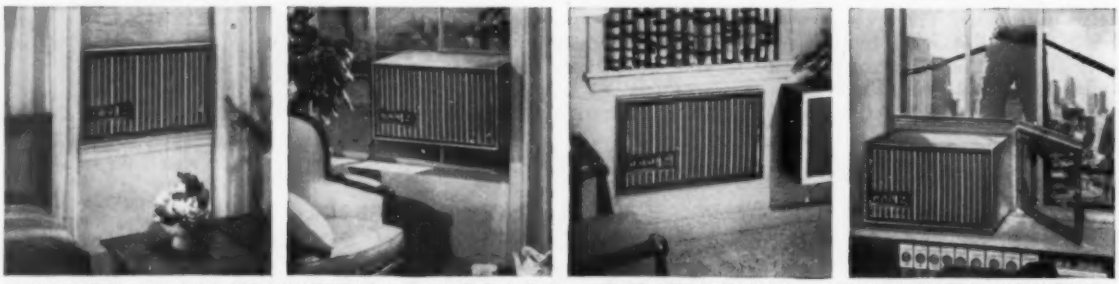
***Check** the BTU's before you buy! Cooling capacities are tested and rated in compliance with Air Conditioning and Refrigeration Institute Standard 110-58, and are stated in British Thermal Units.

Buy now for extra values!

Progress Is Our Most Important Product

GENERAL ELECTRIC

G-E THINLINE AIR CONDITIONERS FIT ALMOST ANYWHERE . . . IN ANY TYPE OF CONSTRUCTION.



THINLINES FIT IN UPPER OR LOWER SASH . . . IN CASEMENTS . . . THROUGH THE WALL . . . OR IN A SWING-AWAY PANEL.



When you have business in Europe...TELEPHONE!

Any time you need an immediate decision on an overseas matter, reach for the telephone. It's quick, direct, *two-way*.

You can contact customers, close sales, check on shipments, get the facts on foreign markets—all without leaving your desk.

Telephoning overseas can accomplish so much for so little cost. Just give the operator your call.

TELEPHONE EUROPE FOR $12

$12 is the daytime rate for the first three minutes from anywhere in the United States to 29 countries in Europe, including:

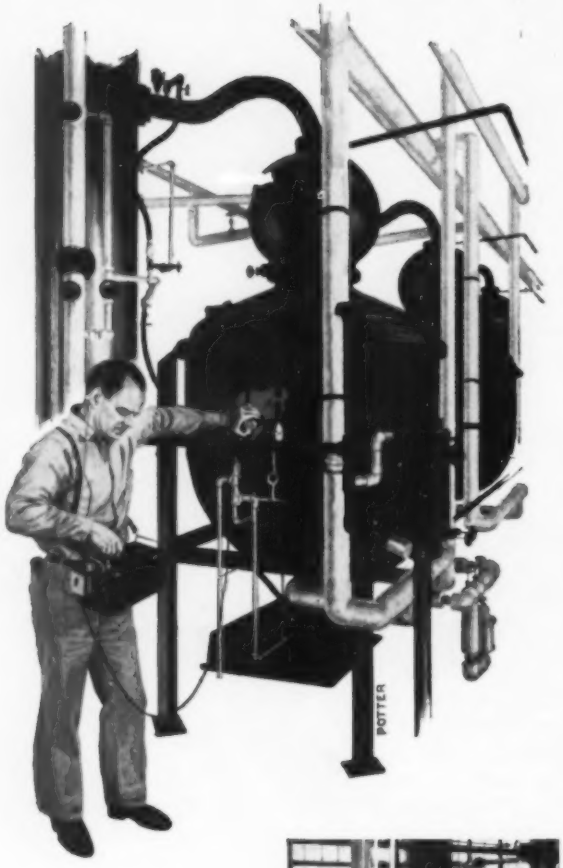
Austria	Germany	Ireland	Spain
Belgium	Great Britain	Italy	Sweden
Denmark	Greece	Norway	Switzerland
France	Holland	Portugal	Turkey

In most cases the rate is even lower at night and all day Sunday. Add the 10% federal excise tax.

BELL SYSTEM OVERSEAS TELEPHONE SERVICE

You can telephone all over the world

His *sixth* sense will detect *Danger*



This man is measuring the thickness of metal in the plate of a pressure vessel, seeking to detect the extent to which areas of the plate may have been thinned by erosion or corrosion.

He is a Hartford Steam Boiler Field Inspector. The pressure vessel is in the plant of a policyholder, protected by insurance engineered to help keep power alive. The instrument is an Audigage — one of the electronic devices which add a *sixth* sense for the exacting work of searching out and evaluating dangerous conditions in power equipment.

Protecting policyholders with Engineering Insurance has been a full-time job here at Hartford Steam Boiler since 1866. This job begins even Before the policy is issued, when H.S.B. *engineering* develops information regarding the objects to be insured, enabling the agent to suggest insurance coverage fitted to the need.

It continues During the life of the policy, with H.S.B. *engineering* inspections of power equipment insured by this Company. More than 600 Field Inspectors work out of 19 Regional Offices; and all *six senses* are used in the never-ending task of searching out signs of danger. These men are backed by a large engineering staff — their recommendations have avoided accident and prolonged the useful life of boilers and machinery for many policyholders.

And After an accident (if one should strike in spite of all preventive efforts), H.S.B. *engineering* assistance is quick and thorough — to help speed recovery and to make prompt and equitable settlement.



Your H.S.B. Engineering Insurance can be tailored to meet your needs.

It makes sense to make sure that your boilers and machinery are protected by Engineering Insurance at its best. See your own Agent or Broker — he can provide H.S.B. coverage.



H.S.B. Field Inspection services guard against accident to keep power alive.

to keep power alive

THE HARTFORD STEAM BOILER
INSPECTION
and INSURANCE COMPANY
Hartford 2, Connecticut



Remember, INSPECTION is our *middle* name

NEW! THE SMITH-CORONA SECRETARIAL BRINGS YOU



Test and discover the new lighter touch and livelier action that means more typing speed, greater typing ease!

More typing freedom, more typing speed on the new Smith-Corona Secretarial Typewriter! New *Speed Booster* accelerates every stroke with less typing effort, makes the keyboard come alive – actually gives you greater typing ease.

And Smith-Corona's Accelerator Action also brings you a marked improvement in typing *quality!* Each character prints the same clear, crisp impression – gives a uniform, professional appearance to every page of every typing job.

Discover for yourself the light, lively touch, the crisp, clean write of Accelerator Action on the new Smith-Corona Secretarial. Call your local Smith-Corona representative for a demonstration or a ten-day trial in your own office today!

LOOK AT THESE EXCITING SECRETARIAL FEATURES!

Clean, Modern Appearance • Seven Decorator Colors • Rugged Construction • Exclusive Total Tab Clear Lever • Instant-Set Margins • Exclusive Half Space Key • Exclusive Page Gage

The new Secretarial is available in fabric and carbon ribbon models, in a complete range of type styles and carriage widths.

THE NEW

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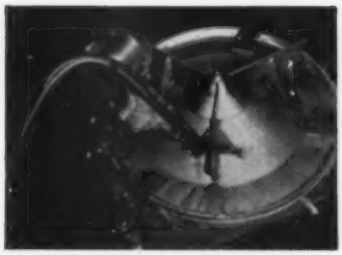
Take a new look at

TITANIUM

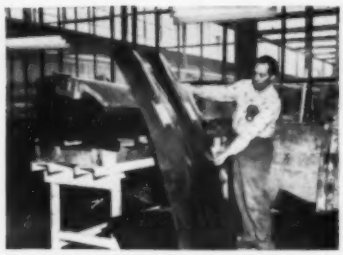
Tough to fabricate? Not today. With Mallory-Sharon's strict quality control and continuous research, titanium becomes a metal of uniform quality and predictable characteristics. It's being successfully machined, welded, formed to exacting specifications . . . in both aircraft and commercial applications.

Check the examples shown here... then contact us for technical data or assistance on your specific application.

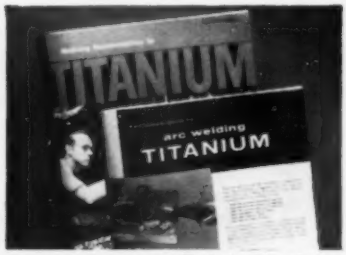
For Machinability—*Improvements in the chemistry of titanium now permit it to be machined as readily as stainless steel. Mallory-Sharon guarantees a maximum of 0.1% carbon—an element that causes machining difficulties if present in higher proportions.*



For Weldability—*Commercially pure titanium and some titanium alloys can be arc welded with good results, provided weld area is protected from contamination by the surrounding atmosphere. Other satisfactory methods include spot, seam and flash welding.*



For Formability—*Titanium sheet as stretch-formed for jet engine pod. Since Mallory-Sharon titanium is certified in a definite strength range, spring-back is predictable and allowed for in dies. Fabricators report very low scrap loss with uniform strength material.*

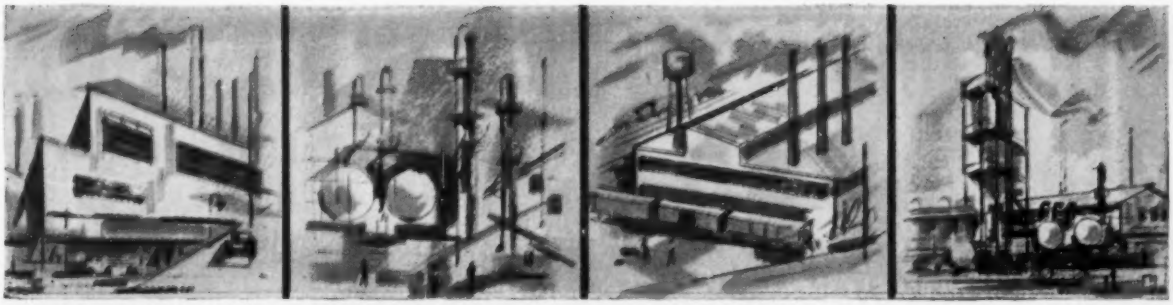


For Technical Data—*Technical brochures are available through Mallory-Sharon on machining, welding and forming of titanium. Write us for literature on the process in which you are interested. Our strong Service Engineering group is available to assist you on specific applications*

MALLORY-SHARON

METALS CORPORATION • NILES, OHIO

Integrated producer of Titanium • Zirconium • Special Metals



FASTEST-GROWING industrial area in America



LOCATE YOUR PLANT IN THE GULF SOUTH

More than $350 million of industrial construction contracts let in the Gulf South last year! Still proposed—nearly $3.5 BILLION. More than 40% of all natural gas consumed by industry in the nation is consumed in the Gulf South . . . the dynamic new industrial frontier served by United Gas.

UNITED GAS SERVING THE *Gulf South*

If fuel is a factor in your operations, write United Gas, P. O. Box 1407, Shreveport, La.



Engineering construction statistics compiled by Construction Daily & Engineering News-Record.

UNITED GAS CORPORATION • UNITED GAS PIPE LINE COMPANY • UNION PRODUCING COMPANY

WHAT MOA OFFERS INDUSTRIES WANTING TO "GROW PLACES"

Why do branch plants located in the Metropolitan Oakland Area (all of Alameda County, California) expand?

Here are the reasons given by 82 executives whose branch plants accounted for a total of 216 expansions in the last twelve years:

1 **PROXIMITY TO MARKETS:** 4 million people in San Francisco Bay Area; over 14 million in California (with approximately 400,000 new residents every year); 24 million in the 11 Western States.

2 **HIGH PRODUCTIVITY:** No weather-induced shutdowns; no slowdowns due to excessive heat or cold. Average mean monthly temperature is 56.5 degrees.

3 **FAST, CHEAP TRANSPORTATION:** MOA is centrally-located for shipment by rail, truck or air to the 11 Western States. It is the gateway for shipment to the Orient.

4 **PROXIMITY TO SOURCES OF SUPPLY:** Most basic materials for processing or manufacturing are produced in MOA or adjacent areas. Natural gas rates are as low as anywhere in the nation. Supply is abundant, with provisions for vastly-expanded future needs. Area's supply of pure mountain water is equally ample, with provisions for expansion ahead of need.

5 **SKILLED LABOR:** Climate, living conditions and cultural and educational advantages attract and hold skilled workers.

6 **LOW CONSTRUCTION COSTS:** No heavy frost, no snow loads to provide for. No need for expensive air conditioning or heating installations. Mere shelter is sufficient for most storage areas.

7 **LOW OPERATING COSTS:** Mild, year 'round climate permits efficient, one-story operation, with natural illumination through large windows. Many operations are carried on outdoors or under open sheds.

8 **FRIENDLY "BUSINESS CLIMATE":** Alert, intelligent voters stand squarely behind forward-looking County and City governments that are committed to a policy of constantly making this area even more attractive to new and existing industries.

ALL THE FACTS IN A "PACKAGE" — YOURS FOR THE ASKING



The MOA Factfile and Data Sheet Service gives you current facts on climate, transportation and distribution, labor supply, markets, living conditions, etc. New material issued periodically keeps your file up to date. More than 1,000 individual companies, banks, business consultants, engineering firms and industrial realtors are using this service. You are invited to send for your FREE FACTFILE — today.

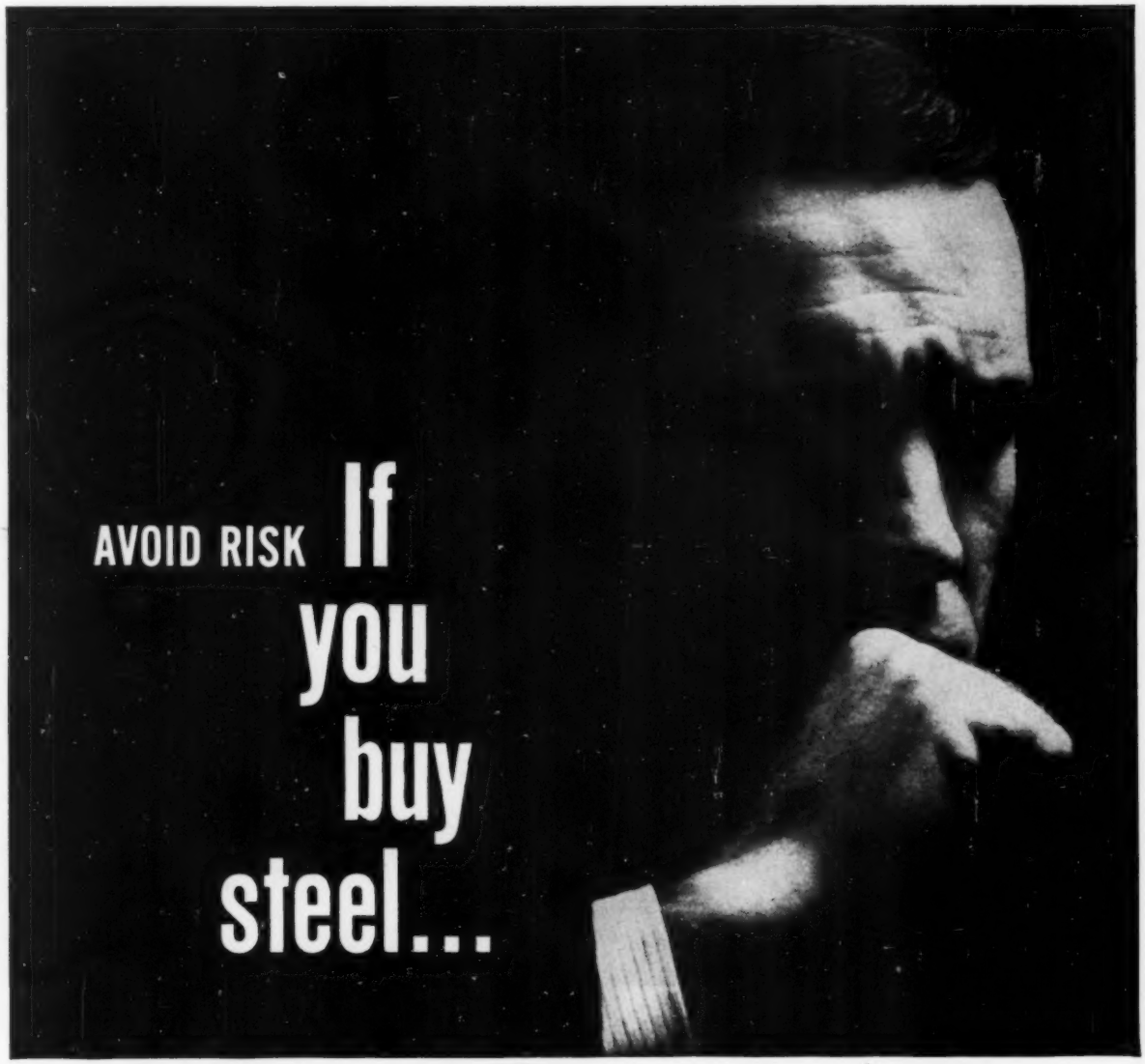
"On the Mainland Side of San Francisco Bay"

Metropolitan Oakland Area

ALAMEDA
ALBANY
BERKELEY
EMERYVILLE
FREMONT
HAYWARD
LIVERMORE
NEWARK
OAKLAND
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USE OUR CAPITAL to cut your inventory costs

You save money when you use the steel inventory of your Steel Service Center. Cutting down your steel stocks frees your capital for more profitable use . . . ties up less working capital. That's good business.

You can save space, and the cost of that space by using our inventories as your own. You seldom suffer obsolescence losses. You avoid inventory problems created by too-ambitious forecasts.

We deliver your steel when you want it, cut to exact size, and ready for your use. Whatever your steel need, there's a nearby Steel Service Center set up to serve you quickly from stock.

If you're putting steel in inventory because you think it's a bargain, compare *all* of your *costs of possession* with the cost and *freedom-from-risk* of buying steel from your Steel Service Center.

Or, to be more precise, get the booklet *What's Your Real Cost of Possession for Steel* from your convenient Steel Service Center. American Steel Warehouse Association, Inc., 540 Terminal Tower, Cleveland 13, Ohio.

AMERICAN STEEL WAREHOUSE ASS'N

The American Steel Warehouse

...YOUR STEEL SERVICE CENTER

COST OF POSSESSION FOR STEEL IN YOUR INVENTORY

Per ton delivered	_____
Cost of capital:	
Inventory	_____
Space	_____
Equipment	_____
Cost of operation:	
Space	_____
Materials handling	_____
Cutting & burning	_____
Scrap & wastage	_____
Obsolescence	_____
Insurance	_____
Taxes	_____
TOTAL	_____

COST OF FREEDOM-FROM-RISK STEEL FROM YOUR STEEL SERVICE CENTER

Per ton, cut-to-size, and delivered

TOTAL _____



"How can outside tooling cut our costs?"

Buy your special tooling from a contract tool and die plant ...and you'll cut down your inside toolroom costs to a matter of maintenance.

Few manufacturers can keep their own toolrooms busy up to capacity, constantly. Outside...you pay *only* for what you need...and benefit from the broader experience of the tooling specialist.

That's *how* you cut costs, avoid capital investment, get more efficient tools ...and at the same time put your expensive space to more profitable use.

Call in an NTDMA plant...and compare figures.

National Tool & Die Manufacturers Association
906 Public Square Building, Cleveland 13, Ohio

WRITE TODAY for NTDMA Directory of Member Plants and Services... an organization of over 1,000 companies that design and manufacture special tools, dies, jigs, fixtures, gages, molds and special machinery, and do precision machining; located throughout the U. S. and Canada.

IT PAYS TO GO OUTSIDE FOR SPECIAL TOOLING

Speed Saves Lives—

"THERE'S NO GUESSWORK ON DELIVERY WHEN UNITED CARRIES OUR VACCINES"



D. W. SPARE
Traffic Manager
The National Drug Company
Philadelphia, Pa.

"Vaccines travel first class and tolerate no delays. There's too much at stake. When United confirms my reserved air freight space, I stop worrying. Because of United's reservation system and radar dependability, I can promise that our vaccines will arrive—and when."

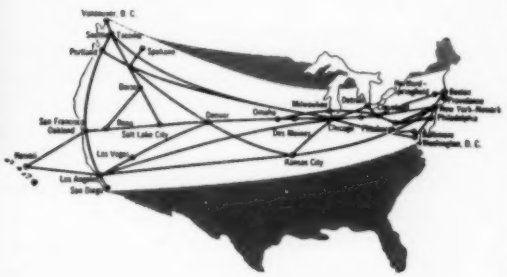
For service, information or free Air Freight booklet, call the nearest United Air Lines Representative or write Cargo Sales Division, United Air Lines, 36 So. Wabash Ave., Chicago 3, Illinois.



"WITHOUT AIR FREIGHT, we'd need laboratories like this one in several parts of the country. You can't produce and ship biologicals by the carload, yet you must be flexible enough to meet local demand when it occurs – and in a hurry."



"UNITED CAN RESERVE SPACE for me on extremely short notice – and has. Al Carnahan, United's Philadelphia representative, follows through to see that the shipment is properly loaded at the right temperature. Extra reassurance for me."



UNITED SERVES 80 MAJOR CITIES, offers broad market coverage on regular passenger Mainliners® as well as on DC-6A Cargoliners.

IT COSTS NO MORE FOR EXTRA DEPENDABILITY—ON UNITED, THE RADAR LINE



How Protection Program of Control Instrument Co.

CONTROLS COSTLY EYE ACCIDENTS

Eye injuries are far fewer and much less severe . . . lost production time plus medical costs *drop* from $5.17* per year per employee to $.56* — that's the experience of Control Instrument Co., Brooklyn, N. Y., subsidiary of the Burroughs Corporation, since installing an Eye Protection Program in June 1956.

Lost production time per employee per year down from 1.67 hours* to 1/10th of an hour; lost production hours in dollars down from $3.36* per employee to $.23* — these are significant savings.**

When *you* install an eye protection program, be sure to go *all the way* with *quality* equipment. American Optical Company can supply the *right* glasses or goggles, in the *right* frames for the man and the job. Write us or phone your nearest AO Safety Representative.

*Estimated

**Savings would be considerably higher if savings in compensation costs were included.

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American Optical COMPANY
SAFETY PRODUCTS DIVISION

Always insist on AO Trademarked Lenses and Frames

SOUTHBRIDGE, MASSACHUSETTS • *Branches in Principal Cities*

BUSINESS OUTLOOK



Confidence—never seriously weakened in this recession—seems to be gaining strength. Wall Street this week appeared to be mirroring a more ebullient mood among businessmen (page 27).

Improving sentiment may be partly due to seasonal influences—the better picture in construction, building materials, and steel.

But there's also a spreading feeling that we're seeing the worst now.

Figures for April now being released will tend to show that industrial activity was lower than in March.

But note that some sensitive weekly indicators—department store sales, electric power output, miscellaneous carloadings, insured unemployment—either leveled out or improved in the latter part of April.

Even more important, **better weather appears to have brought an improvement in construction activity** last month after a slow winter.

And preliminary Treasury Dept. figures for April showed a sharp year-to-year increase in the rate of military spending.

—•—

Construction volume in April—as estimated by the Labor and Commerce Depts.—was up seasonally to $3.7-billion, about the same as a year ago.

Private construction was 2% lower than the year-earlier month, but **public building** activity remained 5% higher.

As you might expect, **some types of construction work are down sharply** while other kinds of activity are being stepped up. Thus, industrial building is 25% lower than last year, and railroad work is down 22%.

But highway building is on an upward curve and is now 12% bigger than last year. **Other construction activities showing an upswing** are military housing under the Capehart Act and office buildings and warehouses.

Moreover, all signs indicate that the Commerce-Labor Dept. estimates understate the April improvement in construction.

The slump in winter building activity was deeper than in most winters because of severe weather. But government statistics on construction didn't reflect the drop in construction jobs and sales of building materials.

So April is showing a greater-than-usual snapback in the number of workers on the job and in business for building materials suppliers.

Lumber was helped early last month by better orders and prices.

This week, leading makers of asphalt roofing materials raised their prices to levels existing before winter price-cutting set in.

And better demand for construction steel gets most of the credit for lifting the steel industry's ingot rate up to 50% of capacity this week. The weekly steel rate hovered at 47% to 48% of capacity in April.

There's growing evidence that construction will remain strong through the rest of 1958.

A better supply of money for "no downpayment" VA mortgages and easier terms for FHA's are bringing back enough medium-income home

buyers to assure at least a moderate recovery of homebuilding in the second half.

Equally important is the **upturn in heavy construction contract awards** compiled by Engineering News-Record, a McGraw-Hill publication.

These contract awards were up 13% in April and topped the year-earlier month by 8%. They indicate the future trend of construction work.

Highway lettings in April were the highest since last July. Bid awards for **big housing projects**—both public and private—continued to climb above last year's level.

—•—

Businessmen have good reason to be wary of reading too much into figures showing week-to-week improvements

But there may be something basic in the behavior of some key weekly figures. They may be signaling a real leveling-out in business.

• **Electric power** has picked up a bit against the seasonal pattern. Weekly outputs since mid-April are falling behind year-ago figures by less than 1% compared to 3% in earlier weeks.

• **Miscellaneous carloadings**—an index of factory shipments—stopped falling early last month.

• **Department store sales** showed a 4% gain over last year in the week ending April 26.

—•—

Over the years since the war, it was the economists who were alarmed by the steady rise in installment debt Now that installment selling is off, it's the retailers—especially auto dealers—who are distressed.

March showed the third straight decline in the amount of installment credit outstanding. People signed $3 2-billion worth of new installment paper—but they paid back $3.5-billion of old debt. You have to go back to the last recession—1954—to find another March in which people were cutting down their installment obligations

Sales of autos, of course, make all the difference in this picture. And, on the other side of the coin, credit sales make the difference between good years and bad for Detroit.

You need only a quick look at the record to see what a difference credit does make. In the boom year of 1955, Detroit sold 7.2-million cars—and auto installment debt rose $3.7-billion In 1956 and 1957, Detroit sold 6-million cars a year and debt rose about $1-billion a year

The way sales are going this year, the industry will sell about 4.5-million cars—and the customers will cut their installment debt by about $1.5-billion.

—•—

Slow sales in both industrial and consumer goods are tending to push down prices. You see the effects in very diverse fields:

• Goodyear lowered prices on three popular **passenger car tires** by 3% to 10%.

• Leading paper makers reduced charges for **kraft wrapping paper**—used in retail stores—from $190 a ton to $180 a ton.

• Hughes Tool slashed **oil drilling rock bits** by 15%.

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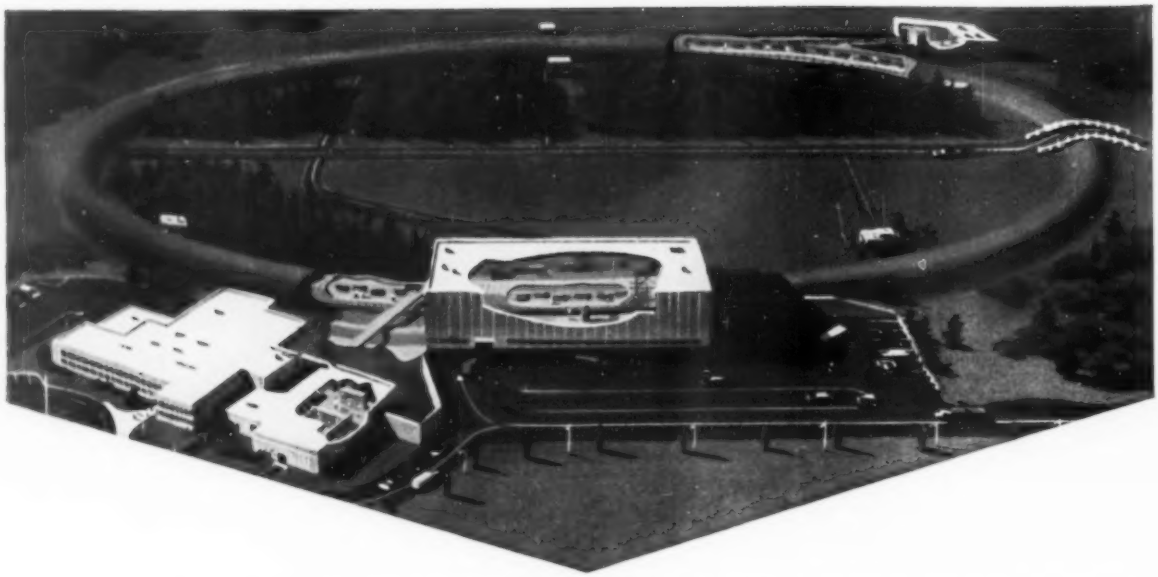
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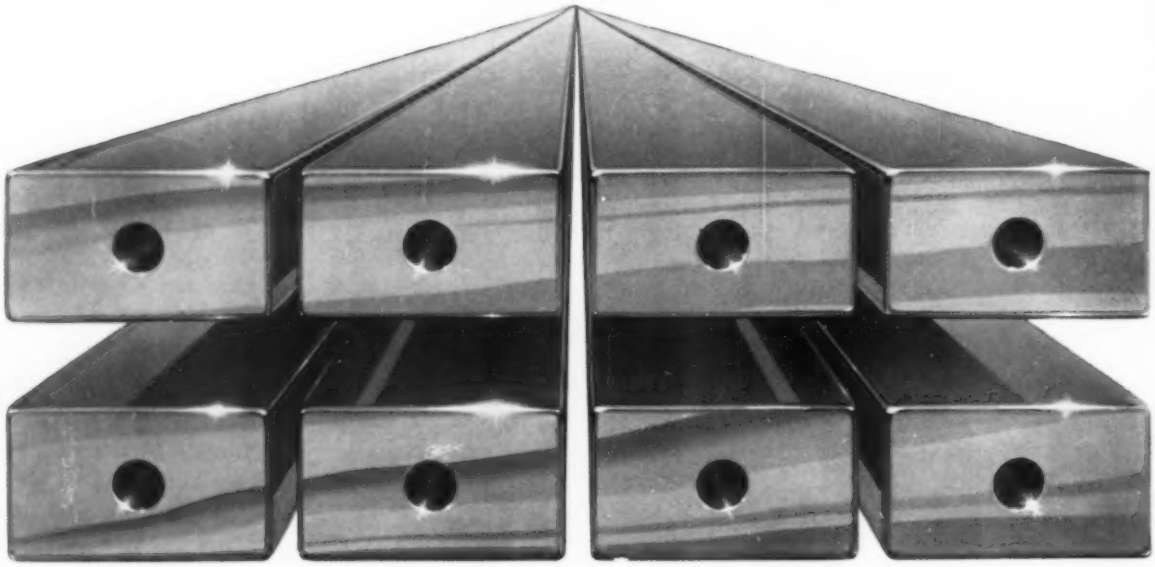
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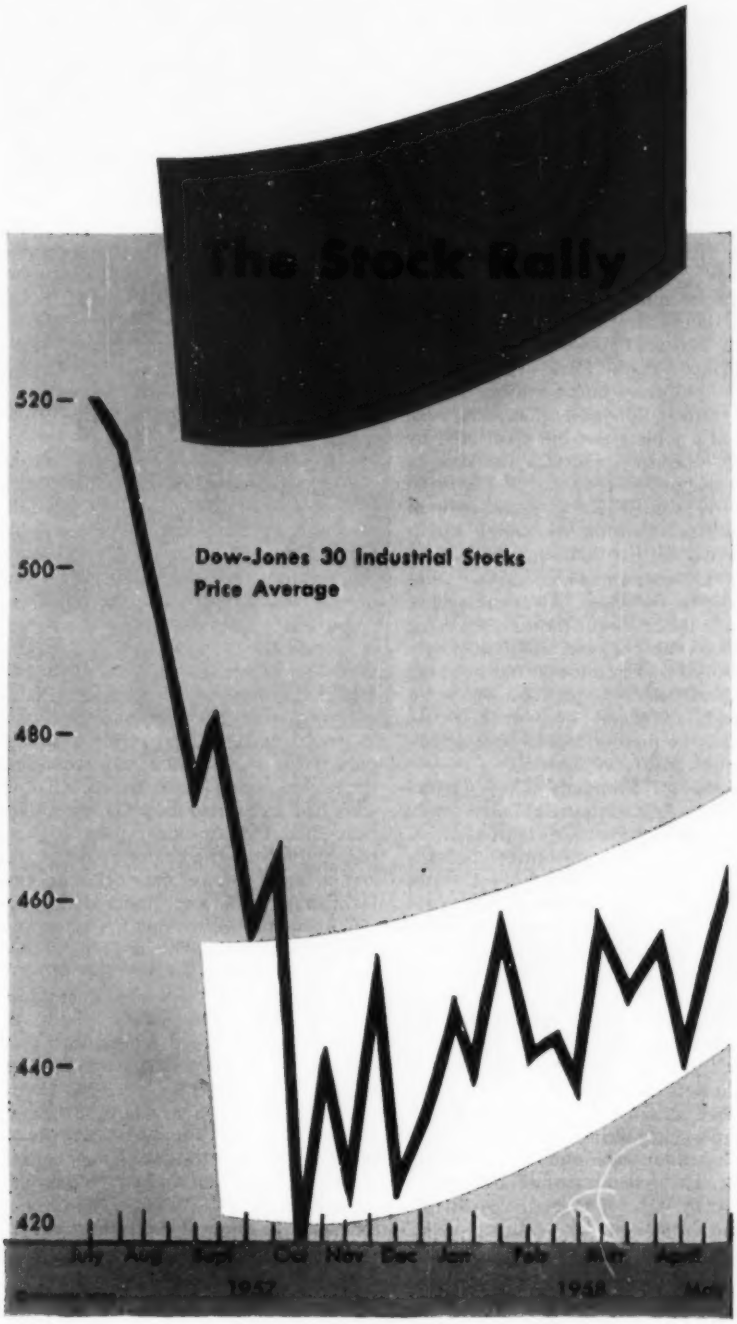
FIRST FOR LASTING QUALITY—FROM MINE TO MARKET

BUSINESS WEEK

MAY 10, 1958

NUMBER 1497

Investors Bet on an Upturn



Market's new 1958 high is sign investors think worst is over; many pros still worry, and new drop could come, but nobody wants to miss the boat.

The stock market this week plainly is insisting that the end of the business downturn is in sight.

Ever since late January, stock prices have tried to shrug off the decline in the economy and the sharp drop in corporate earnings. But each time the bellwether indicator, the Dow Jones industrials average, climbed over 455, buying dropped off and the average retreated.

Last week a new assault began (BW—May3'58,p112). Once again the average hit 455. But this time, buying picked up steam. On Monday, over 2.6-million shares were traded as the index pierced 460. On Tuesday, volume jumped over 3.1-million—the second largest trading day this year—and the average closed at 463.67.

This new high for the year was a clear sign of investor confidence. Despite sharp reductions in earnings which have put many dividends in jeopardy, investors showed a conviction that the decline in business is only a temporary affair that will soon be followed by a renewed upsurge. And as the stock market normally moves in advance of business (BW—Apr.26'58,p154), the stock market's high this week reflects a view that the worst is over, and that business should be turning up sometime in the next few months.

• **Skeptics**—Many stock market experts, however, remain skeptical. Wall Street chart readers and technicians contend that the bearish phase is not over (page 99). And a good many professionals hold that the stock market can make a number of false moves, and that this week's action is in that category.

But so far most of the professionals have been wrong about the course of the market.

Now the majority of professionals are saying that the rally cannot be maintained past 470 or, at the most, 480. As they see it, there's bound to be a wave of selling by investors who considered themselves "locked in" with

stocks purchased at high prices. But even most of the pessimists no longer expect the low reached last October to be broken.

• **Selective**—A good many analysts don't pay much attention to the averages. They feel that the stock market is really composed of a large number of markets—or groups—with normally divergent tendencies. They point out that many groups—machine tools, autos, oils, chemicals—are still well below their highs, so they do not look for any quick recovery in these areas.

The fact is that today's market is highly selective. The rally to date has been sparked by rises in defensive issues—utilities, drugs, grocery chains—that offer protection in a downturn. The strength of these groups is not truly indicative of a new bull market; at best, it is a sign that investors favor equities over other investments.

• **Shift**—Brokers agree that there has been no turning away from equity investments during the downturn—only a change in the types of equities favored. Both institutional investors and individuals continue to purchase common stocks as a hedge against inflation. Aware that the last bull market started in 1953 while the economy was headed down, they don't want to miss the right moment again.

This is the main reason investors are paying little heed to poor earnings records (BW—May3'58,p32). As one professional explained, "Stocks today are a buy if you think industrial production will climb to 160 in the next 18 months—and that's the way investors are betting."

• **Worry**—This attitude worries a good many observers and reminds them of the 1929-30 period when, as one commentator put it, the market was discounting not only the future but the hereafter. After the 1929 crash, the market rose from 195 to 297 before collapsing to 40 in 1932.

This may happen again. But it would take a new dive in business activity to bring on a new collapse in the market.

• **Backstop**—Actually, today's market is relatively stable compared to the markets of the 1920s. The buying power of the institutions tends to bolster prices. As long as the institutions (the big investment trusts, pension funds, insurance companies and the like) continue buying—and so far there has been no sign of a switch—the market is unlikely to show signs of panic.

A sizable downturn is still conceivable. Even if the economy is bottoming out, many companies will be hard put to improve earnings and continue current dividend payouts. A rash of dividend cuts by companies that managed to get by the first quarter without one would be bound to affect confidence.

Squaring Off on Jobless Pay

The party fight over who can give more help to the unemployed moves to the Senate next week, with Democrats champing to outdo Republicans who won in the House.

Senate Democratic Leader Lyndon B. Johnson is a man who dislikes more than anything else to lose a fight on the floor of the Senate. He also prides himself on his reputation as one of the best compromisers to stride the halls of Congress since the days of Henry Clay.

Johnson will need all his parliamentary skill and knack for compromise when the Senate next week begins legislating added benefits for the unemployed.

The issue is loaded with pitfalls. To Johnson, the job ahead is to get through a bill that will be more liberal than the one sponsored by the Eisenhower Administration and passed by the House—but that will still have a chance of getting accepted into law.

• **Alliance With Dixie**—The House, with Republicans and Southern Democrats teamed up once again, last week rejected a jobless pay bill sponsored by the Democratic leadership in favor of the more modest proposals of the President. A similar Republican-Southern Democratic coalition is shaping up in the Senate for the Administration plan.

The Democratic leadership has a lot at stake in the issue. Democrats have accused the Administration of being callous to the plight of millions of jobless workers. Eisenhower has retorted that the Democratic program was nothing but a federal dole that would "wreck" the present federal-state unemployment insurance system.

• **Opposing Proposals**—The House-approved Administration bill would provide funds for a 50% extension in the duration of unemployment benefits now paid by the states. Most states now provide a maximum of 26 weeks of eligibility. Under the Administration bill, which carries a $600- to $800-million price tag, these states could provide up to 13 weeks more. The money for additional benefits would be paid back at a later date.

The Democratic measure would grant a flat 16-week extension to those who had exhausted benefits and also give 16-week coverage to persons now excluded from unemployment compensation. The federal government would pick up the tab for the extra payments, estimated at about $1.5-billion.

• **New Statistics**—Leaders in the Senate have put off action on the issue until next week to give time to prepare for the fight. Maneuvering on the issue will take place against a background of the latest government figures on employment and unemployment.

The Bureau of Labor Statistics reported this week that nonagricultural employment went up 50,000 from mid-March to mid-April. But the figures showed a steadily deteriorating position in manufacturing, with employment down 271,000. There now are some 1,570,000 fewer factory workers holding jobs than there were a year ago.

On the brighter side, construction employment rose sharply during the month—up 210,000, which is 75,000 more than seasonal.

• **More Exhaustions**—One factor causing concern, however, is that long-term unemployment (15 weeks or more) jumped from 1.4-million in mid-March to almost 1.9-million in mid-April. Many of these people will be running out of employment benefits soon, if they have not already (BW—Apr.26 '58,p25).

Johnson has promised quick action on unemployment compensation to get federal money as quickly as possible into the pockets of the unemployed. But he has no intention of accepting the Administration bill. His aim is to put a Democratic stamp on any unemployment measure that comes out of Congress.

• **White House Plans**—The legislation finally approved by the House differed somewhat from the Administration bill. It would make federal funds available only if the states specifically requested them, and would make anyone eligible who had exhausted benefits since last June 30. The Administration favored Jan. 1, 1958, as the eligibility date.

The most intense opposition to the Democratic bill was directed against its financing provisions. Opponents charged that a program of straight federal grants would subvert the present insurance system on which unemployment payments are based. Southern Democrats also feared federal intrusion into an area that traditionally has belonged to the states.

• **States' Rights**—Sen. Harry F. Byrd, whose Finance Committee will hold hearings on the legislation, spoke for Southern Democrats when he said he intended to find out why any additional federal help is needed in this area at all. He contended that the states now have $8-billion in unemployment reserves that could be used to pay for extra benefits, instead of drawing on Treasury funds through a new bill.



Marion B. Folsom



Arthur S. Flemming

New Head at HEW

Marion B. Folsom (top), Secretary of Health, Education & Welfare, will leave the Eisenhower Cabinet in late summer. He will be succeeded by Arthur S. Flemming (above), president of Ohio Wesleyan University.

Flemming, who has served under both Democrats and Republicans, was Director of the Office of Defense Mobilization when he resigned in 1956 to return to the presidency of Ohio Wesleyan.

Folsom has been in Florida since Apr. 1, on what began as a routine two-week vacation. He's still there, after a series of medical checks, recovering from what aides describe as exhaustion. Folsom left Eastman Kodak to join the Eisenhower Administration in 1953 as Under Secretary of the Treasury, shifted to HEW in 1955. He intends to reenter private business.

Pipelines Feel the Whip

Three natural gas suppliers are under antitrust indictment as a result of their opposition to a fourth entering the lucrative Upper Mississippi Valley market.

For years, communities in the Upper Mississippi Valley have been clamoring for increased supplies of natural gas to burn in homes and industrial plants.

For almost as many years, natural gas pipeline companies have been eying the lucrative market and planning to serve it. But these plans now may be delayed even longer: Three companies are under antitrust indictment as a result of their opposing a fourth company's fight to enter the market.

• **The Issue**—In 1955, Tennessee Gas Transmission Co., a major pipeline system, decided to enter this market. It created a subsidiary, Midwestern Gas Transmission Co., to serve the area.

Midwestern asked the Federal Power Commission for permission to build a 1,100-mile pipeline from Tennessee to the Canadian border near Emerson, Manitoba (BW—Mar.29'58,p73), where it would take gas from Trans-Canada Pipelines, Ltd.

Three other gas systems already in the area saw immediately an economic threat to their markets in Minnesota, Wisconsin, Illinois, and Michigan. These companies had plans for expanding their service areas, and protested to FPC against Midwestern's request.

• **Charges**—Last fall, while FPC was holding lengthy hearings on all the proposals, the Justice Dept. was submitting evidence on antitrust charges that the three companies had gone too far in their opposition to Midwestern. Last week, a federal grand jury in Milwaukee returned antitrust indictments against the companies and their top officers.

Named as defendants were American Natural Gas Co. and its president, Ralph T. McElvenny; Northern Natural Gas Co. and Pres. John F. Merriam; and Peoples Gas Light & Coke Co. and its former board chairman, James F. Oates, Jr.

Northern's efforts to extend cheaper and better gas service have violated no law, defendant Merriam said. McElvenny of American said the question belonged solely before FPC and not in antitrust proceedings. Both companies promised to fight the charges.

• **Penalty**—The Justice Dept., whose antitrust attorneys have often expressed displeasure with some of FPC's regulatory policies, apparently decided to dramatize the case by going to a grand jury to seek a criminal charge, rather than the less drastic step of filing a civil case of its own. If convicted, each of the companies could get maximum fines of $50,000 on each of four counts, and the executives similar fines plus one-year jail sentences on each count.

Officially, FPC is keeping quiet about the charges. But several of the commission members feel that the Antitrust Div. is interfering with their business.

• **Rebuttal**—Some gas industry lawyers say the charges are "ridiculous" and predict that the Justice Dept. in plunging into a new antitrust field—the activities of regulated gas pipeline companies—might have difficulty proving that the companies' acts can be violations of the antitrust laws if they are done by companies under FPC jurisdiction.

The antitrust attorneys seem confident of their ground, and at least one FPC member says the antitrusters have uncovered activities of the defendants that were not revealed at the commission's recent hearings.

• **Testing**—From the hearing came this testimony on the struggle over rights to the market:

Northern Natural, now indicted, had at one time contracted with Trans-Canada for its own gas supplies from the Canadian source. But by June, the company was informed that the contract was canceled. Between letters, Tennessee Gas Transmission apparently had come into Trans-Canada's life.

Canadian politics even crashed into the hearings. Trans-Canada, the supplying gas line, had been sponsored by the late Liberal government of Canada. Since the Conservatives gained control, there have been doubts that Prime Minister Diefenbaker would allow an export license for the gas.

Even after the examiner's hearing ended, the case still had some surprises in store. Midwestern amended its initial application and offered to sell gas to Peoples—earlier a foe and now indicted—for distribution in Chicago area.

• **More Delay**—FPC was asked for a quick decision in the revised plan so Chicago could get additional gas by next winter; but so far, the commission has acted neither on the original, controversial case, nor on the amendment under which Midwestern and Peoples would cooperate.

Peoples was the only one of the indicted companies affected by Midwestern's new plans. Both American and Northern apparently have steered clear of any compromise.

The basic FPC case still awaits an examiner's decision. The present snarl could put off a final solution for years.



PERLMAN of the New York Central: "In the first quarter . . . we lost $17.5-million . . . you can't keep going like that for long."



McGINNIS of the Boston & Maine: ". . . [delaying tax payments is] an easy way to 'borrow' money. We can't borrow anywhere else."

Railroads Plead for Help to

The Eastern lines claim only quick action by Congress can save seven of them from bankruptcy now and others from grim trouble later.

"I speak for seven shaky railroads," said Pres. Patrick McGinnis of the Boston & Maine (picture, above), "and I can tell you that unless we get aid from Congress—this year, not next—we will go under. Without that aid my own railroad will go bankrupt this year."

The other six, McGinnis said, are in much the same shape. Bankruptcy hovers about as close behind him as it does behind the presidents of the New Haven, the Erie, the Jersey Central, the Lackawanna, the Lehigh Valley, and the New York, Susquehanna & Western. And net income of all Eastern roads is down (chart, right).

This was the picture presented at midweek to the House Interstate & Foreign Commerce Committee headed by Rep. Oren Harris (D-Ark.). The committee heard testimony of Harris' bill to put 90% federal backing behind loans to needy railroads. It is the grimmest given to Congress since both Senate and House started hearings on the plight of the railroads in January. And it is among the last that the railroads will present before Congress takes action on proposals to help the rail industry.

• **Unrelieved Gloom**—McGinnis came to Washington to outline the plight of at least some of the railroads, along with Pres. Alfred E. Perlman of the New York Central and Pres. James M. Symes of the Pennsylvania RR. No railroad executive was there from the West or the South to tell about the situation in those areas, where railroad income is down this year but few roads are losing money. So the gloom in the hearing room was unrelieved. The only hope for the future, said the New York Central's Perlman, was that Congress would do all it could to revive the Eastern railroads. "It certainly seems that what you want," quipped Rep. Joseph P. O'Hara (R-Minn.), "is either adrenalin—or embalming fluid."

That wisecrack is a fairly accurate summation of what faces the railroads in the Northeastern sector of the nation. Legislation, however, already provides the embalming fluid, in the form of the Bankruptcy Act. And it's still doubtful whether Congress will agree to emergency aid—direct federal loans or 100% government-guaranteed loans—for railroads such as the Boston & Maine that foresee bankruptcy this year. It's equally doubtful whether Congress will supply the longer-term aid—changes in rate-making rules and the jurisdiction of railroad regulatory bodies—that is sought by those roads facing no immediate emergency.

I. Help Wanted—Now

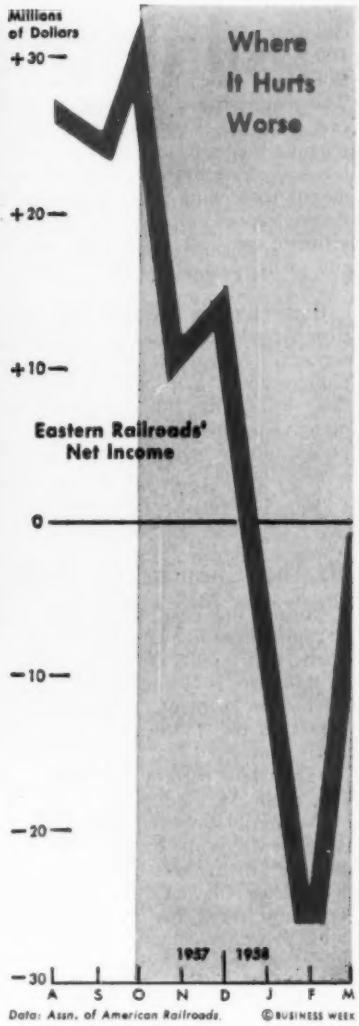
No bill now before Congress can delay the bankruptcy of the seven shaky railroads for which he speaks, says McGinnis. To survive, each of them needs quickly to find new sources of working capital. The Boston & Maine is itself so short of ready cash that it is delaying payment of its state taxes. "Eventually we'll have to pay a 10% penalty on the taxes," says McGinnis, "but for the moment it's an easy way to 'borrow' money. We can't borrow anywhere else."

None of the seven roads, says McGinnis, has collateral to give to any lender. Therefore, they need either direct federal loans or 100% government guarantees for private lenders. "It doesn't matter which we get, so long as we get it fast enough," says McGinnis. "Already Pres. Moore of the Jersey Central (first-quarter loss: $1.2-million) says he doesn't see how he can keep his railroad going after Labor Day.

"It's truly no exaggeration to say that



SYMES of the Pennsylvania: "Not an iota of maintenance work is being done on the Pennsylvania's property, and yet we still estimate we lost $5-million in April."



Stave Off Sheriff

there will be a series of railroad bankruptcies this year or early next year unless this Congress gives us the aid we need. The bankruptcy of one of the seven railroads will instantly affect the other six. Theirs in turn will spread to other roads that seem more stable now. And a series of bankruptcies will affect the whole transportation industry; it will, for instance, strike at the airlines' plans to put jet planes into service."

• **All Suffer**—What brings the strain on the seven so close to breaking point is only an exaggeration of the pressure on all other Eastern railroads: (1) steep losses on passenger services that can't readily be cut because state regulatory bodies refuse to permit sharp curtailments or abandonments of service, and (2) a large and still increasing drop in freight business. The net effect on the Boston & Maine has been to turn a slim $43,000 net income in last year's first quarter into a $2.6-million first-quarter deficit this year.

For the New Haven the drop has been steeper—from a $114,000 net income in last year's first quarter to a $3.6-million deficit this year.

• **New Haven's Woes**—The New Haven's Pres. George Alpert didn't come to Washington to give his version of what faces his railroad. But one of his board members was there, in another capacity. Lee P. Stack, a New Haven director since 1956, is also financial vice-president of John Hancock Mutual Life Insurance Co., one of the major holders of railroad securities. "Without a full guarantee by the government," said Stack, "I don't think John Hancock would lend to the New Haven . . . and I don't see the New Haven ever repaying a loan unless it's able to drop the Boston end of its commutation business."

Stack warned the committee: "The sheriff may overtake some of our important railroads before the end of 1958," and later said he believes that if the New Haven loses more than $5-million this year—and gets no emergency government aid—it will go under.

These two roads, along with the other members of the "shaky seven," are in the most critical position of all the 40 major U.S. railroads, and their appeals to Congress focus most closely on their need for immediate aid in getting loans to pay their debts and keep out of bankruptcy.

II. Help Wanted—Soon

The East's two biggest railroads, the New York Central and the Pennsylvania, talk more today of their need for longer-term aid. "But," says the Central's Pres. Perlman, "though our railroad now requires only long-term assistance, I might have to say six months from now that we're caught in a real emergency. In the first quarter of this year we lost $17.5-million, and you can't keep going like that for long."

The Pennsylvania (first-quarter loss: $15-million) is better off. Pres. Symes says it has $44-million in cash right now, and its payroll for the next month will be around $40-million. Though this represents something like hand-to-mouth living, the road does have a $50-million bank line of credit on which it has not yet drawn.

Yet without swift action by Congress both see a grim future. Says Perlman: "If you borrow even at the prime rate of 3½% and you can get only 2% return from investment in railroad operations, why, you're on the quickest road to bankruptcy."

• **Maintenance Hacked**—And so both roads have been chopping hard at their costs. The Central's employment, around 100,000 in June, 1954, is now

down to 59,000. The Pennsylvania's 100,000 in 1956 is now around 80,000. Both have closed their car repair shops. The Pennsylvania has 50,000 freight cars laid up—25,000 of them needing repairs, the rest empty for want of business. Says Symes: "Not an iota of maintenance work is being done on the Pennsylvania's property, and yet we still estimate we lost $5-million in April and will lose $4-million more in May."

Both railroads hold that the way to stop these losses is to hack at passenger services. And both agree that only Congressional help will let them do this, by giving the Interstate Commerce Commission, rather than state public utility commissions, the final jurisdiction over curtailments of passenger services, and by cutting state and local taxes on their properties.

III. The Chances for Help

Outside the East, the railroads live, by comparison, like kings. Almost everywhere, their profits are down sharply so far this year—30% and 40% declines in income are frequent. But those of the West and the South generally are still making profits.

"The whole pattern is different," says Pres. Clair M. Roddewig of the Assn. of Western Railways. "We run our trains more economically over longer distances with fewer stops. Our losses on passengers haven't been piling up as long, and we've had more money to put into improvements. State taxes are lower and the state commissions more amenable to our dropping unprofitable services.

"The difference is this: The Eastern railroads have got a fire that has to be put out. We haven't. But without changes in the regulations that bind us all, the Western railroads might in a few years find themselves in the same position as those in the East."

So it's only natural that most Western railroad men don't care much for appeals for federal loans for the rail industry. Says one of them: "What's the sense in lending money to a railroad that can't make ends meet—money the railroad won't be able to pay back?" But all of the Westerners go along with other proposals for changes in ICC ratemaking and passenger service rules.

• **Two Proposals**—This lack of a united front could help weaken the railroad's case before Congress for a complete package of aid, short-term and long-term.

Sen. George Smathers (D-Fla.), chairman of the Senate's surface transportation subcommittee, has recommended a mixed package that would give both kinds of aid to the railroads (BW—May 3'58,p38). The proposals include repeal of transportation excise taxes, government backing for loans to cover operating expenses and new equipment, more flexible ICC freight rate rules, and some tax exemptions. The Administration has its own plan, similar in most respects but more conservative in its loan features.

There are hints from some Congressional leaders that help will come not via one of these ready-made programs but in separate pieces. The Eastern railroads don't seem to mind. They—and the "shaky seven" especially—have made it plain they want the fastest kind of financial aid they can get. They're willing to wait a year or more longer for other legislation to help them in the long pull.



LONG-TERM aid is the goal of New York Central's Walter R. Grant, financial vice-president (left), and Pres. Alfred E. Perlman. They can meet current needs—at the moment.

Employer

● For the first time in almost 20 years, employers can lead from strength in contract negotiations.

● Yet many are waiting to see what happens in Detroit before showdowns with unions.

● While the outlook is for fewer strikes, bargaining will be exceedingly rough.

For the first time in almost two decades, employers are sitting down at labor negotiating tables in a favorable position for hard bargaining on contract terms to their liking. Unions are vulnerable. The recession has taken away their most powerful weapon—the ability to hurt management badly by shutting off production by a strike.

For many years, unions have bargained militantly in a sellers' market. Employers have had to weigh the cost of contract concessions against the cost of a walkout. Worried about backlogs of orders, many consistently have taken the position that labor peace at a high price is preferable to conflict.

I. Reversal of Power

This has changed. This year, inventories are high in auto and most other industries. Business is off. There is less worry about disappointing customers, much more about controlling operating costs—and, just as importantly, about contract concessions given over the past years that now hamper economic and efficient management.

There is no question at all about what this means to employers. They are able to face a test of economic power at the bargaining table—and unions aren't. The pressure to give way is heaviest on labor. Its leaders must think in terms of the cost of a strike, and of whether one can be won. This year, even such powerful and militant bodies as the United Auto Workers have paused at that. UAW's retreat from aggressiveness, its strategy of defensive temporizing, has been a dramatic development of the past several months.

It has underscored the fact that the auto union is bargaining from the weakest, most insecure position in its 23-year history—and that its leaders, from Walter Reuther down, are worried about what this might mean.

• **Common Concern**—UAW and its leaders aren't alone in their gloom.

Holds Cards in 1958 Bargaining

Other unions share the concern over bargaining prospects in 1958.

Except for labor organizations in soft-goods and some marginal industries, most have had no experience in writing contracts during a deep business downturn when employers are able to bargain from a strong position.

Along with UAW leaders, other union policymakers are aware—and wary—of today's economic facts of life. They are moving cautiously, if at all.

• **Inexperienced Bargainers**—Much the same thing is true about most employers. Most have had even less bargaining experience than the unionists they face at negotiating tables. They recognize that they have a decided bargaining advantage this year. But, there is some question of how hard they will press this advantage.

Many employers, and particularly those in smaller concerns, are convinced that this is a year for hard bargaining to be directed at (1) halting "inflationary" wage increases, year after year, and (2) getting rid of "a great many contract abuses and absurd practices" that hamper production and run up costs.

But, a quick check in industrial centers across the country indicates that most negotiators feel the major auto companies—General Motors and Ford—should take the initiative.

Few seem willing to risk a showdown with their unions on their own.

II. The Auto Situation

A showdown is becoming less and less likely in the auto industry. A strike is considered highly improbable, a settlement—either a new contract or an extension of the present contract into 1959 or 1960—appears more probable, day to day.

Dealer inventories are so high that major companies could take a two-month work stoppage, if necessary. Unemployment is a heavy burden on UAW—and is due to get even heavier. Funds are a problem for the union. And, so are internal troubles.

Plant cutbacks have affected workers with 10 to 15 years of seniority, the post-World War II members of the union who are experiencing their first real recession—and prolonged unemployment. Among many, loyalty to UAW is wavering. They are more interested in returning to work than in supporting a strike that might delay their recall—and that could cut off their weekly unemployment compensation and supplementary unemployment pay.

• **Discontented Members**—Moreover, layoffs have had a hard impact on UAW's large Negro membership. The thousands who have lost jobs are dissatisfied. Idle, shut off from other employment by color and by seniority status at auto plants, they want quick help from the union to restore jobs. For many, the alternative may be a return to homes below the Mason-Dixon Line.

If there were real strike issues this year, such discontent would be quickly forgotten in solid support for a walkout. That has been UAW's big weapon in the past.

However, members see no really controversial issues in bargaining. Management offers have assured employees at least 9¢ an hour more pay and other concessions this year, more in 1959. Union demands run much higher—up to an estimated 73¢ an hour (page 96)—but most of these will be dropped when bargaining tightens up in the next three weeks. The key that is expected to open the way to a strikeless settlement is the management pay offer.

• **Firm Stand**—UAW will try for a bigger gain, but, according to GM, only minor concessions, already being considered, will be added to the present offer.

One is expected to liberalize auto SUB plans. A more important one may give skilled craftsmen under UAW contracts a larger raise.

The skilled workers are in revolt against the auto union, and a breakaway campaign may receive National Labor Relations Board sanction later this month. The major companies are as concerned as UAW over this possibility. For GM and Ford, craft separation would mean vastly complicated bargaining with a dozen unions—any one of which could shut down production lines—instead of just UAW. So, the prospect is for more bargaining table recognition for the skilled workers.

Talk this week in Washington placed the value of GM's "minor concessions" at 5¢ an hour, which would be added to an average 7.1¢ improvement-factor increase and a 2¢ cost-of-living adjustment payable June 1, for a "package" estimated at 14¢ an hour.

If such an offer materializes, a peaceful settlement could come quickly.

III. Chaotic Outlook

But, it would not mean an end to labor worries generally. Though the nation's top mediators now talk of the likelihood of a peaceful end to bargaining in Detroit, they expect tough bargaining to continue elsewhere through the remainder of this year. Strike estimates have been revised downward since January, when the outlook was for peaceful 1957 to be followed by a tense 1958, with tough negotiating on the part of labor and management, and with widespread strikes (BW—Jan.11'58,p109). But the Federal Mediation & Conciliation Service still expects "a pretty chaotic situation" as bargaining spreads out.

• **Rough Bargaining**—The country's most important state mediation services echo this. Many high in the labor movement agree with it. The consensus is that there are many factors that can make bargaining "exceedingly rough" in the months ahead.

The mediators say ruefully that the big and headline-making settlements will be the start rather than the end of their troubles. Problems will arise when—and if—unions try to extend gains to smaller concerns less able to give concessions this year.

"We foresee a situation in which the severity of a rash of labor disputes could be quite large—but not overwhelming from an economic standpoint," Joseph Finnegan, director of FMCS, said in Washington. He added, "In other words, we expect to be busy as hell." But, he commented, the mediation service expects fewer strikes than it originally predicted.

Finnegan's reason is the growing reluctance of unions to walk out in these troubled economic times. This is expected to lead to less insistence on "pattern" terms, and an inclination to bargain hard—but with ingenuity—to improvise changes in economic settlements so that they will fit lesser companies.

• **Employer Demands**—But in a year when many employers are committed to a wage increase because of the system of built-in pay boosts covering 4-million workers and setting a "pattern" 6¢ to 8¢ floor under bargaining for others, economic issues are not the most important in many branches of industry.

Non-economic issues loom bigger. They will make bargaining tougher.

Contract duration is an example. Employers who negotiate favorable terms will want to lock them into extended pacts, but unions will fight for another round of talks in a year.

Seniority rules that ignore ability, pay for time not worked, restrictions on production, and other practices forced into contracts when unions had a bargaining edge won't be overlooked now. With unions vulnerable, employers can be expected to press for changes. Labor negotiators, intent on winning more pennies, may agree to some concessions, particularly on clauses that only affect small groups of members.

Satellite's View of Outer Space

The U.S. satellites have already collected enough information to revise the known facts, to raise new problems.



POINTING UP, Explorer I (white object at top) went off to collect space data that is startling U.S. scientists.

Reports from the first U.S. satellites enforce a wholesale revision of scientific beliefs about interplanetary space, it became clear at two meetings of the National Academy of Sciences and the American Physical Society in Washington last week.

As a result, the more optimistic scientists who had hoped to put a man in orbit outside the earth's atmosphere within the next decade are mulling over evidence that the job may be tougher than they had thought. On the other hand, the satellites have gleaned evidence that some things that had seemed cruelly troublesome aren't anything to worry about after all.

• **"Hot" Zone**—By far the most spectacular of the week's disclosures was a report by Dr. James A. Van Allen of the University of Iowa that a belt of perilous cosmic radiation starts at about 1,000 mi. out in space.

Existence of the belt gives pause to thoughts of sending manned rockets out of the earth's atmosphere. Most scientists believe that no unprotected space traveler could live through such a zone of radiation.

No one knows yet how thick the belt is, though Dr. Van Allen predicts that it probably extends to 8,000 mi.—making it 7,000 mi. thick. If it is no more than a few hundred miles deep, man might be able to get through it safely if his space vehicle is clad with a thin shield of lead. But even a thin layer of lead would add 30 to 100 lb. to the weight of a space capsule, and this in turn would require rocket engines with much greater thrust than those now available in the U.S.

• **Slowing the Earth**—Other early findings about the earth's outer atmosphere promise to be helpful, both in explaining phenomena that long have puzzled scientists and in designing practical space ships.

For example, scientists were informed that space from 1,000 to 10,000 mi. above the earth contains 10 times as much gaseous material as had been thought. This discovery helps to explain the tiny but inexorable slowing of the earth's rotation.

The gases are concentrated enough, scientists figure, to warp the earth's magnetic field 45 degrees. This distortion, in turn, holds back the earth's rotation.

That the earth's spin is slowing comes as no news to scientists. But, according to Dr. Arthur Beiser of New York University, the gas concentration is around 50 times as influential in this retardation as scientists had thought, and 50 times as potent as the frictional effect of ocean tides.

• **Space Dust**—Another discovery revealed at the Washington meetings is the dustiness of space just beyond the earth's atmosphere. This space is cluttered with hundreds of thousands of dust particles per cubic mile, in contrast to the few dozen particles per cubic mile that scientists had expected to find there.

And the upper reaches of the earth's atmosphere—a mere few hundred miles up—are 14 to 40 times as dense as scientists had thought.

The new-found concentrations of gas and dust particles (unlike the radiation belt) aren't regarded as major obstacles to space exploration. And the additional discovery that, outside the earth's atmosphere, there is relatively little hazard from meteorites and temperature extremes is welcome news to designers of space craft. It will ease the necessity of reinforcing space ships—something that was proving hard to reconcile with the need to save weight.

• **Rocket Armada**—Speakers at the meetings were matter-of-fact but optimistic in discussing what, in the U.S. stable of rockets, might be used to launch space vehicles under the newly discovered conditions.

Dr. Herbert F. York, chief scientist for the Defense Dept.'s Advanced Research Projects Agency, said Jupiter and Thor intermediate range ballistic missiles will be ready for space research early next year. Atlas and Titan intercontinental ballistic missiles will be ready, he said, "in the early 1960s, perhaps in 1960 itself."

The IRBM types, Dr. York told the Physical Society, will be able to launch 700 to 1,000 lb. of payload into the easiest orbits. An "easy" orbit is a circular, rather than elliptical, path no more than 200 mi. above the earth's surface and moving eastward from a point as near the Equator as possible (such as Cape Canaveral, Fla.) to take fullest advantage of the earth's 1,000-mph. rotation speed.

• **Need a Whole System**—However, to get a 700-lb. satellite into orbit will require not only a booster rocket of IRBM size and power but also upper stages specially designed to drive such a heavy payload.

With our first IRBM-powered satellites to be launched next year, says Dr. York, returnable satellites should also become possible by 1960. But the early versions of these satellites can't be expected to reach their ultimate payload of 700 to 1,000 lb. The complete sys-

tems to develop this potential won't be available until later.

For next year's IRBM satellites, Pentagon scientists are aiming at payloads of 100 to 300 lb., and they'll settle for half that weight for the returnable satellites that are due to go up in 1959-60. Compared with Russia's half-ton Sputnik II, this sounds puny. But even these figures show a big gain over U.S. efforts to date: the 4-lb. Vanguard payload and the 20-lb. payloads put into orbit by the Jupiter-Cs.

• **Moonshot Problems**—At this rate, obviously, early U.S. IRBM rockets won't send manned vehicles to the moon. However, moonshots without human passengers, and even landings on Mars or Venus, are probably within their capacity.

To get a satellite orbiting around the moon will require a terminal control system, such as forward-firing rockets to cut the satellite's speed to get it into a moon orbit. The weight of such a system would cut the payload to 100 lb. or less (BW—Apr.12'58,p45).

To make a soft landing on the moon in which scientific instruments could be expected to survive the impact, Dr. York estimates, weight of enough rockets for braking action would further reduce the payload to 30 or 60 lb.

• **ICBM Launchings**—When components of the Titan and Atlas ICBM rockets can be used to fire space vehicles, it should be possible, York says, to launch "several tons of net payload into the easiest orbits, with smaller payloads for the higher-energy orbits."

York estimates a payload of 200 to 330 lb. for a trip to the vicinity of the moon. For an orbit around the moon or a soft landing on it, other slices would have to come out of payload, with 100 lb. likely to be the limit for scientific instruments landed on the moon.

Dr. York estimates that if good enough guidance were available, an ICBM-launched space vehicle could put a payload of 500 to 700 lb. on Mars with today's rocket fuels, using the planet's atmosphere for braking. But such a rocket would have limited scientific use. It would require 10 lb. of batteries to send one picture of TV quality back to earth, he says, and "it's obvious you won't be able to get many pictures with a 500-lb. payload limit."

Steady Steps to Fusion Power

An economical fusion reactor is many years away, yet scientists in government-financed laboratories are working on at least four methods. They'll be reported at Geneva next fall.

When the world's leading atomic scientists convene in Geneva next September, American delegates will be on hand to describe not one but four different approaches to the dream of extracting electric power from the limitless supplies of hydrogen in ocean waters.

Spokesmen for the Atomic Energy Commission carefully avoid claiming any breakthrough in efforts to find a means of producing useful power from controlled thermonuclear fusion of hydrogen. They are sure an economical fusion reactor to produce power is, at best, many years away. Yet they are guardedly optimistic.

• **Peaceful Fusion**—AEC scientists have been working for several years to find a means of harnessing, for peaceful purposes, the awesome destructive force of the hydrogen bomb.

No details were available on the program, labeled Project Sherwood, until last January (BW—Jan.25'58,p30), when the commission took the wraps off its experiments with the so-called "pinch bottles."

• **The Principle**—All the thermonuclear experiments disclosed thus far are attempts to heat and compress a gas (or plasma) called deuterium—a heavy form of hydrogen—to such a point that fusion occurs and neutrons are given off. The resulting heat presumably would be used, just as in the atomic power plants that are being built now, to make steam that would turn turbogenerators and create power.

A basic requirement is believed to be raising of the plasma temperature to at least 100-million degrees centigrade, for at least ⅒ second at a time. This is a goal that no one has reached. The main obstacle is the tendency of the plasma to "leak" to the walls of the container and there to cool off.

The "pinch effect" approach, announced in January, involves passing tremendous currents through the gas. At the same time that the current heats the gas, the magnetic forces of the current "pinch" the gas away from the walls of the doughnut-shaped container, greatly increasing the density and temperature of the gas.

Months ago, the British announced that they thought they had achieved controlled thermonuclear reactions in the laboratory by this method. American researchers have shied away from such a claim. At any rate, this approach suffers so far from two big drawbacks: (1) It doesn't create sufficiently high temperatures, and (2) the plasma is too unstable to hold the temperatures long enough anyway.

• **Next Steps**—Research to improve the "pinch bottles" is going ahead. But brief papers presented by AEC scientists to the American Physical Society meeting in Washington last week show that heavy emphasis also is being put on the three other approaches:

Stellarators. In this device, an effort is made to confine the gas—away from the container walls—by using external magnetic fields produced from coils circling the tube.

The gas is heated by an electric current to a temperature of 1-million degrees centigrade. It is then superheated by "magnetic pumping"—that is, using a rapidly pulsating magnetic field to "shake" the hot gas.

Dr. Lyman Spitzer, Jr., who described this method, says a much larger stellarator to be completed at Princeton University in 1960 may be capable of achieving temperatures up to 100-million degrees C.

Mirror machine. In simplest form, this device consists of a long straight tube surrounded by coils that produce a magnetic field.

Dr. R. F. Post of the University of California Radiation Laboratory explains that, in effect, the tube is turned into a football-shaped magnetic bottle by imposing stronger currents at the ends of the tube than at the center.

The strong magnetic fields at the ends constitute invisible "magnetic mirrors" that deflect particles back and forth many thousands of times before they are lost. Post theorizes that an efficient bottle might heat the colliding particles to a billion degrees. However, even then, loss of energy through the escape of particles would be too great for effective operation unless improvements can be made in the machine.

Luce ignition system. This device, described at the Washington meeting by Dr. Albert Simon of Oak Ridge National Laboratory, could develop into a fusion device on its own. But its real value is expected to come when it is used in conjunction with one of the other devices.

The purpose of the Luce system is to inject individually charged particles, which already are super-hot, into a magnetic container. These ions are trapped—in a mirror machine, for example—so as to create the desired nuclear reactions as they collide.

Another method, taken less seriously, is the proposal by Columbia University Prof. Jay Orear that power be produced by tapping the heat from small hydrogen bombs, set off twice an hour within huge, specially designed steel chambers above ground. AEC is, however, examining the possibility of setting off atomic fission bombs underground and drawing off the heat to produce power.

"Among the few things which economists predict with any degree of confidence is that . . . prices will, on the average, be higher in future decades than they are today."
—*William J. Baumol*, Princeton University

"There is progressive disenchantment with monetary policy as a major means of achieving the objective of the Employment Act . . ."
—*Edwin G. Nourse*, former chairman, Council of Economic Advisers

". . . Something like a 3% to 5% per year increase in the stock of money is required for long-term price stability."
—*Milton Friedman*, University of Chicago

". . . Consumer credit controls or variable depreciation allowances . . . are unpleasant to administer . . . But if we are unwilling to add such instruments to our policy arsenal, we should face the fact that we cannot cope with inflation without reducing the growth of the economy and running serious dangers of depression."
—*Otto Eckstein*, Harvard University

"If the committee draws one conclusion from its present study, I hope it may be that 1957 should go down as the last year in which the United States fought a dedicated anti-inflationary battle with self-immolating weapons."
—*John P. Lewis*, Indiana University

"The evidence is not conclusive, but it is strongly suggestive, that economic growth cannot be reconciled with price stability."
—*Robert C. Turner*, Indiana University

"I would prefer to accept an average price increase of 1% a year, rather than having to accept an average level of unemployment of 5% instead of 4%, if the choice came down to that . . ."
—*Carl F. Christ*, University of Chicago

". . . Such measures as budgetary restraint and tight money can be so effective in removing excess demand that they can overdo this and remove some demand that is not in excess . . . Nevertheless, prices may keep on rising."
—*Abba P. Lerner*, Johns Hopkins University

Opening the Debate on Prices

NEXT Monday, May 12, the Joint Economic Committee of Congress, headed by Rep. Wright Patman (D-Tex.), opens 11 days of hearings on a key economic riddle—and policy issue—of the day:

Why do prices keep moving up while the economy moves down? And what action should government take to cure, separately or in combination, the recession and creeping inflation?

This week, in advance of the hearings, the Joint Committee has released a preliminary set of answers in the form of a volume of studies prepared for it by 47 of the nation's leading economists, some of whose views are quoted above. This volume—The Relationship of Prices to Economic Stability and Growth—constitutes a summing up of the current state of the best scholarly thinking, and of the still unsettled debates on the problem of balancing the demands of growth and stability.

The 712-page study may do much in the near future to shove Congressional—and Administration—policy off dead center in the choice of methods to fight the recession and the dangers of economic stagnation. For the long run, it may help build a foundation for a well-designed program to provide stable growth.

For economists, too, the volume marks a milestone. It shows that the necessity of writing and talking to congressmen and the broad public is stimulating U.S. economists to seek a new clarity and pungency of expression. It reveals, too, a body of scholars of first-rate competence, insight, and intellectual courage.

But it also discloses that there is still a lot to do before economists, politicians, government administrators, or businessmen can be sure they really understand what makes the U.S. economy work as it does—and how to make it work better.

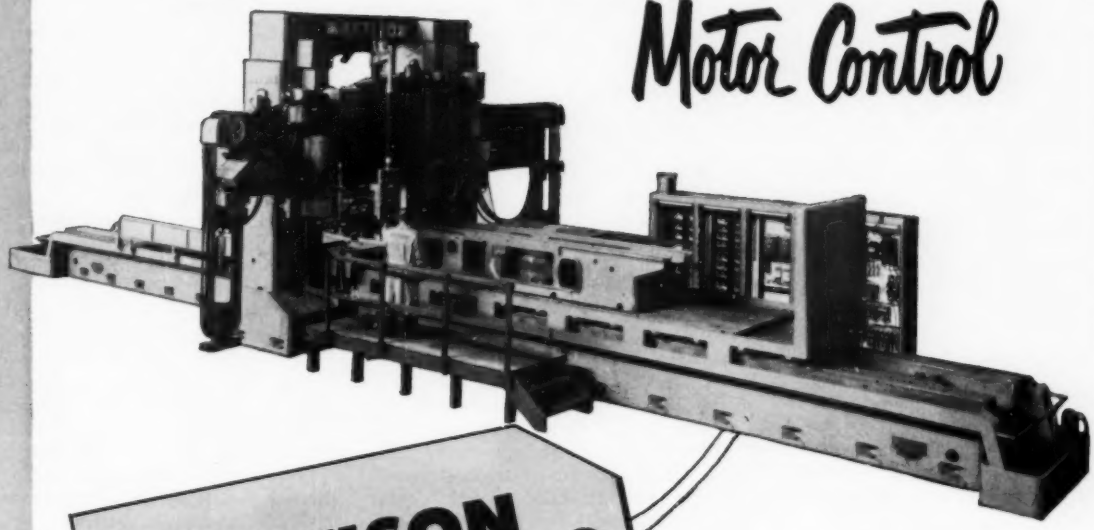
I. Jobs vs. Stable Prices

The study focuses on this dilemma: The country has set for itself—spelled out in somewhat vague language in the Employment Act of 1946—the objective of full or "maximum" employment. Also, it must grow at a fast enough rate to meet its own future tasks as well as the swift rise of Soviet economic power. Can these goals be reconciled with maintenance of stable prices?

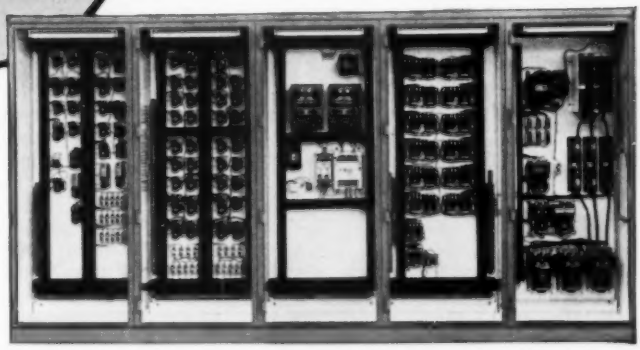
On balance, the study strongly

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suggests, the answer is "No." Gradually rising prices appear highly probable—at least at postwar rates of growth.

• **Consensus**—Most economists would agree with Leo and Betty Fishman, of West Virginia University, that "the historical record reveals a remarkably close relation between economic growth and a rising price level." The Fishmans support their case by quoting, as they say, "Arthur F. Burns himself," former head of the Council of Economic Advisers:

"One of the plainest teachings of history is that rising prices are a recurring feature of the expanding phase of the business cycle."

Many other contributors to the study stress that on the downside of the economy, prices have tended to drop less than they rose on the upswing. This tendency grows, they note, as corporations and labor unions brace themselves against downward movements of prices or wages, and as government and voters alike put more emphasis on preventing joblessness than on rolling back prices.

The overwhelming majority of the contributors agree that the choice between growth and high employment on one side, and long-run price stability on the other, is an unhappy one. But they agree that they would vote for growth and high employment.

II. Inflation and Growth

None of the contributors, however, attempts to make out a case for gradual inflation as something desirable in itself. All consider even creeping inflation an evil—but a lesser evil than depression, stagnation, or mass unemployment.

Just how much of an evil inflation is—in its various stages and degrees—was most carefully examined by Dean George L. Bach, of Carnegie Institute of Technology. He comes up with these conclusions:

• There is little evidence that relatively mild inflation reduces the current real output of society, though sharp, speculative inflation probably does help cause a later price collapse and recession.

• There's not much evidence, either, that mild inflation significantly stimulates output or, in the long run, economic growth. However, rising prices are likely to be a side effect of strong total demand, which does boost output and stimulate growth.

• The impact of moderate inflation in changing the distribution of income among major economic groups is less than often is claimed. Bach finds, however, that businesses have seen their relative share of national income decline slightly under moderate inflation.

But another contributor—Princeton's William J. Baumol—brings out in a sharply reasoned paper that relative share of national income may not be the primary aim of large U.S. corporations. For that matter, even bigger profits may not be the primary aim, he finds.

The primary goal of business, he says, is growth, and most large companies "aim to maximize not profits, but sales volume." So long as profits continue at a satisfactory rate, management "will devote further effort to increasing its sales rather than its profits."

However, there's only one dependable way, says Baumol, to make businesses grow and achieve the economic advances sought by the nation—and that is to make them pay. And there is "one instrument ideally suited to achieve the government's purposes in this respect—the tax laws."

Baumol believes that taxes which restrain investment must be cut to provide incentives for growth. For example, easier taxation of capital gains than of income, he points out, has already worked to promote growth by making the retention of earnings by corporations attractive to large stockholders. This stimulates growth because retained earnings are readily employed to finance plant expansion and other types of corporate investment.

If Congress wishes to promote growth, Baumol concludes, it should revise the tax laws to favor investment still further.

• **Right Kind of Growth**—Baumol would also stimulate economic growth by aiding education—through a system of national scholarships, more support for basic research, and well-endowed university chairs for outstanding scientists and leaders in research.

Baumol believes, however, that we must consider carefully what kind of economic growth, and how much, we want and need. "Even the Russian threat," he says, "should not force us to jump to hasty conclusions." To meet Iron Curtain competition, he holds, we need not so much to speed up over-all expansion as growth in some key sectors, especially scientific and military programs. "Certainly," he notes, "this has been Soviet strategy."

III. Getting Back on the Track

The contributors also show much concern with the more immediate question of how the U.S. is to regain at least something resembling the postwar rate of growth. Few dissent from the general view that the government and the Federal Reserve have misused budget and money policy during the past few years, especially as 1957 wore on. This the economists blame on a misguided notion of the extent of inflationary dangers and a misconception of the U.S. economic problem.

• **Exaggerated**—Stanford's Kenneth J. Arrow and others strongly imply that the inflationary danger has been greatly exaggerated. Arrow finds that the cost-of-living index is highly imperfect as a measure of price change. The basic formula behind the index, he says, "tends to overstate the rise in the cost of living from any fixed base."

The University of Chicago's Albert E. Rees adds, "We may be paying a high price in terms of restrictive monetary or fiscal policy to keep price indexes from rising when the true level of prices is really stable or declining. It is certainly not inconceivable that the true level of prices is now lower than it was five years ago."

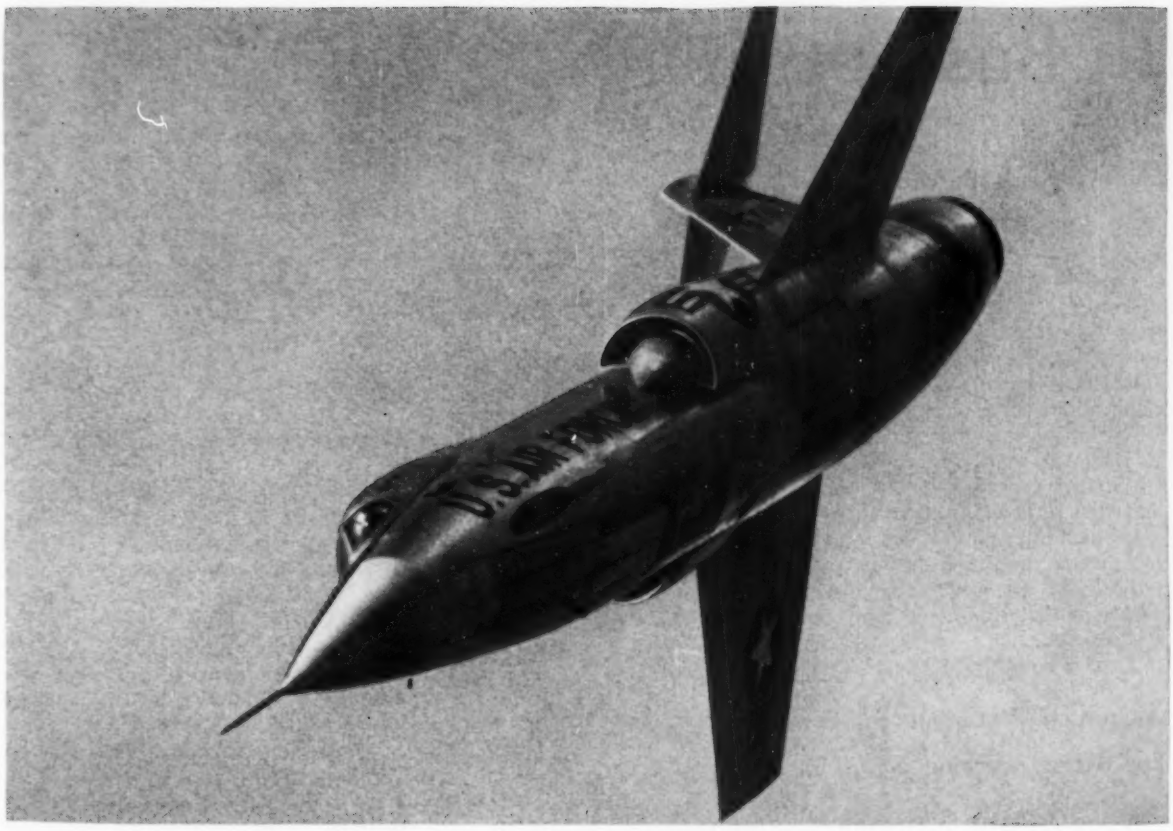
• **What Causes Inflation?**—Most economists agree, however, that there has been some creeping inflation in recent years. But they disagree on the nature of the inflationary problem. Some still feel that the traditional theory explains what happened—that we had been overloading the economy with too heavy demand, or had permitted too great an increase in the money supply, and that the only remedy was to cut back.

Others sharply dissent, and describe the new inflation variously as "cost inflation," "cost-push inflation," "wage inflation," "markup inflation," or "sellers' inflation." Whatever the description, all find the basic cause of the trouble on the supply side of the price equation—that is, in labor wage policies, or business pricing policies, or both.

• **Wrong Remedies**—These economists feel that the worst possible medicine for this was to continue to chop away at demand through monetary and fiscal policies, and thereby worsen employment and output—without really correcting the causes of price increases. John P. Lewis of Indiana University put this case most forcefully. He argued that in curtailing demand, such measures "are apt to curtail investment and thereby reduce the most effective offsets to 'cost-push' inflation that the system presently contains—namely, productivity improvement and capacity expansion."

In the light of this, Lewis calls the current recession "the least necessary" since 1937-38, and the first since then "for which gross errors in public stabilization policy bear a major part of the responsibility."

• **More to Come**—This coming week, before the Joint Committee, the economists—and representatives of business and labor—will delve further into the problem of how to treat America's peculiar recession-inflation combination—still, in most economists' views, a remarkable new development in business cycle history.



Guided Missile with a Man in it. Electrical power for the Lockheed F-104 Starfighter, one of the world's fastest interceptors, is furnished by a 24-volt sintered-plate, nickel-cadmium battery developed by Sonotone Corporation, Elmsford, N. Y.

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Survey Finds Purchasing By Business Will Speed Up in Next 60-90 Days

Purchasing agents all around the nation are feeling optimistic enough to plan stepped-up buying in the next 60-to-90 days. That's the majority finding in a survey of more than 400 companies that will be published next week by Purchasing Week, a McGraw-Hill publication.

"Significant" increases in buying of key commodities or materials were planned by 44% of the companies, while 46% expected to hold steady during the period, and only 10% intended to cut back their buying.

Commodities most widely due for stepped-up buying included a diversified list of iron and steel products. Others due to feel the accelerated purchasing were packaging materials, fuels, lubricants, nonferrous metals, and plastics.

• • •

Aluminum Producers Make a Play For More Machine Shop Business

Aluminum's Big Three—Aluminum Co. of America, Kaiser Aluminum & Chemical Corp., and Reynolds Metals Co.—are now buying back their customers' scrap aluminum turnings and borings. It's not that they need the scrap—**they want to enlarge their market for screw machine feedstocks, now dominated by brass.**

The brass industry has long had a floor under the screw machine scrap, but aluminum scrap fluctuated between 5¢ and 20¢. "We never know what we are going to get for our aluminum turnings and borings," the typical machine shop complaint went, "but we do know what we can get for the scrap brass."

Alcoa led the way in announcing a floor of 16½¢ a lb. for scrap sold directly to the company (in quantities of at least 20,000 lb.) and 15½¢ a lb. for scrap collected through company-appointed dealers. It agreed to buy scrap up to 60% of customers' purchases of screw machine feedstock. The other companies matched Alcoa's offers.

• • •

Kansas Bill Sets Tight Limits On Installment Finance Charges

Gov. George Docking of Kansas this week was prepared to sign into law a bill regulating the financing of installment buying.

The bill grew out of the Attorney General's pending case accusing Commercial Credit Corp. of charging usurious rates on car and appliance loans in Kansas (BW—Apr.26'58,p176), but the measure, of course, can have no effect on that case.

What it will do is set stringent limits—in line with other state laws—on future finance charges:

On autos, the maximum annual rate is $7 per $100 on new cars, $10 on one- and two-year-old used cars, and $13 on older models.

On goods and services, annual maximums range from $12 per $100, down to $8 per $100 on purchases of over $1,000.

The law also requires licensing and supervision of sales finance companies, disclosure of all insurance costs included in the finance charge, and refunds for buyers who prepay their loans.

• • •

Grand Central Site Leased to Group Planning City's Largest Office Building

A site straddling Park Avenue between Grand Central Terminal and the New York Central Building has been leased for 80 years by the Central and the New Haven RR to four New York investors: Erwin S. Wolfson, chairman of Diesel Construction Corp., Herbert and Stuard Scheftel, and Alfred G. Burger.

The group is actively lining up tenants for a projected 50-story building, whose 3-million sq. ft. of floor space would top the Empire State Building by a wide margin. The building, which would replace the present Grand Central Terminal Office Building, would have an annual rent roll of $100-million.

If the deal pans out, the building is expected to go up in 1961, with Wolfson's Diesel Construction doing the work.

• • •

Zeckendorf Branches Out From Real Estate, Buys Control of Chesapeake Industries

William Zeckendorf, flamboyant New York real estate operator, has diversified into a new field. Last week, Zeckendorf announced, quietly for once, that he had acquired a controlling interest—about 25%—in Chesapeake Industries, a diversified holding company once dominated by Zeckendorf's friend, the late Robert R. Young.

• • •

Louisville Workers to Keep Jobs As Hotpoint Cancels New Chicago Plant

Hotpoint Co., an appliance division of General Electric, this week halted construction of the nearly completed shell of a compressor plant at Elk Grove, a Chicago suburb. Orders were cancelled for equipment for the plant, which was expected to cost $7.5-million overall.

GE says it expects to finish the Elk Grove plant later, for an as yet undetermined use.

The move means that 300-500 workers will not be laid off in the compressor facilities at GE's already hard-hit Louisville plant, while an equal number of new workers will not be hired at Elk Grove.



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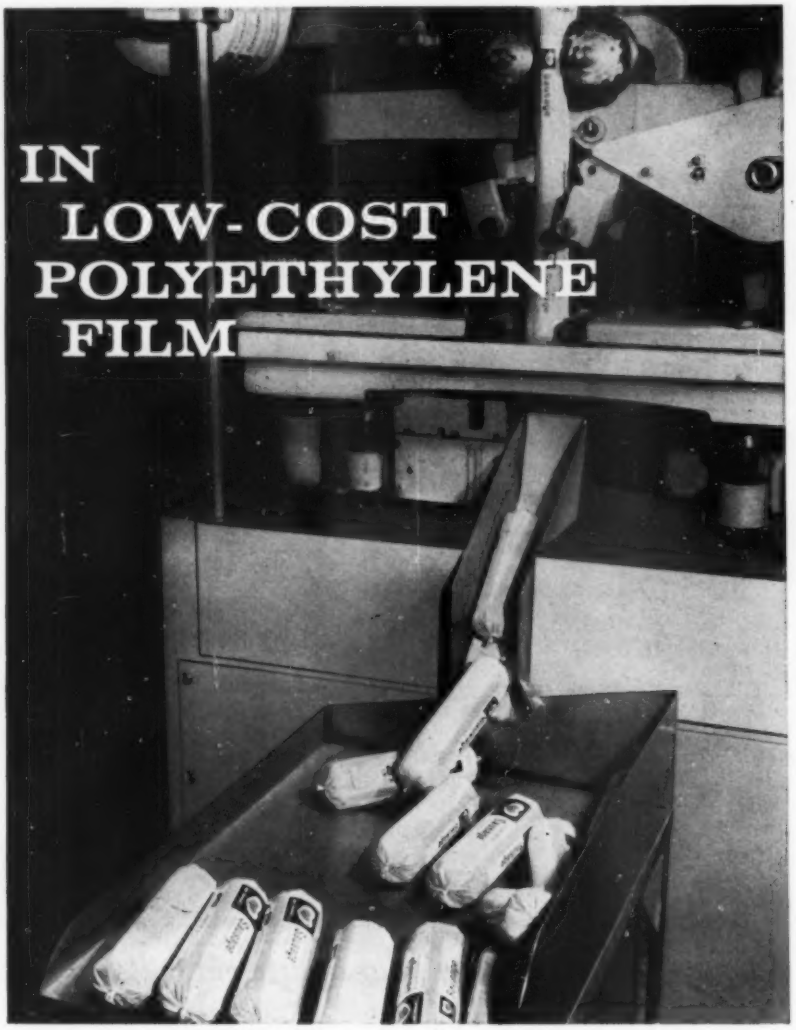
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WASHINGTON OUTLOOK

WASHINGTON
BUREAU
MAY 10, 1958



Tax cut prospects will come into focus within a few weeks.

Decisions on whether to cut will have to be made. Unless the House and Senate act, there will be automatic tax reductions July 1—the corporate income rate will drop from 52% to 47% and a number of Korean War excise hikes will expire. So the wait-and-see attitude can't be maintained much longer. Congress and the White House will have to make up their minds. And since it takes Congress three to four weeks to pass legislation, even if there's no real controversy, time is getting short.

There are guide stakes to watch, as the situation develops.

Start with the Administration stand—opposition to general cuts.

This probably will be maintained. With spending on the rise and revenues on the decline. Eisenhower and many of his key advisers are very reluctant to back a tax cut that will practically guarantee a deficit of $10-billion to $13-billion in the upcoming year. Eisenhower, of course, will go to a "recovery" program if things turn really sour.

Some tax "reforms" may be backed. Officials talk of the need for tax changes that will encourage investment by business. Many ideas are advanced. But the one thing on which there seems to be considerable agreement is more freedom for management on depreciation.

"Relief" ideas also come into the picture. Most mentioned are cuts in the tax on freight and passenger transportation and the excise on autos. Relief from these taxes could have important price consequences.

Now look at the tax situation in Congress. Some congressmen would go farther than the Administration.

Politics favor general relief—cuts for individuals, especially in the lower income brackets where the vote is heavy.

Help for small business is secondary in politics. After all, corporations don't vote, so they lack the influence of individuals.

Congress agrees with the Administration on excises. Leaders would like to give some relief, to help cut prices and stimulate sales.

Now, to sum up the prospects:

Odds still are against a general cut of individual and corporation income tax rates. They will be voted only if the White House gives support, which seems unlikely. Democrats in Congress are still unwilling to take responsibility for pushing the deficit even higher. Besides, in Democratic thinking, the White House will get the blame for continued high rates.

Excise relief stands a good chance. It will be selective, maybe limited to transportation and autos. Sen. Paul Douglas (D-Ill.) is trying to get backing for cutting the 10% auto tax to 2.5%, if Detroit in turn will add on a price cut of 6%.

Investment incentives are in doubt. But if Eisenhower pushes hard, you may see action as an aid to long-term growth and stability.

Here's some timing to keep in mind:

The first move will be in the House Ways & Means Committee, which originates tax legislation. Hearings probably will start May 19 on plans to give some relief to small business. The Treasury will be asked for its view on rate changes and proposals to give family-owned concerns more

WASHINGTON BUREAU
MAY 10, 1958

time to settle estate tax problems. Committee members will use these hearings to get Treasury views on broader questions.

The Administration will move by early June to request an extension of rates expiring June 30. It's this extension measure that is expected to provide the vehicle for whatever important action is taken this year.

—•—

On the business outlook, Washington got some fresh support this week for the theory that the recession is close to bottoming out. It came from business economists who met with Commerce Dept. economists to talk about trends, preliminary to the Business Advisory Council meeting at Hot Springs, Va. Here's the gist of what business economists reported:

Inventories of raw materials used in the production of finished goods have been worked well down in most lines. In the case of steel, there was rather general agreement that users will have to step up orders to meet fall needs and that this will bring a rise in steel output.

Public works increases are beginning to show up. The most noticeable rise so far is at the local government level. But rising federal spending for highways and other construction is beginning to take hold.

Capital expansion discussions revealed a sour note. Most economists figured that present capacity and the present rate of expansion, in many lines, can meet the needs of the next five years. But there was a lot of talk about modernization expenditures and intensified research, especially for new products.

—•—

Eisenhower will get most of his unemployment pay plan (page 28).

The Senate will go along. Democrats will try to make the federal advance to states for extra benefits a direct grant. But after the licking this idea took in the House, there's doubt that its backers will be able to put it over in the Senate. So the prospect is that the final bill will call for repayment of the some $600-million to $800-million Washington will lend.

—•—

Legal clarification on mergers still is months away. You probably will have the benefit of a Supreme Court decision in early 1959.

Watch the Bethlehem-Youngstown case. You probably will get the district judge's decision within two months. No matter which way it goes, there will be an appeal to the Supreme Court.

Government lawyers are worried. They see this as a key test of federal powers to bar mergers on grounds they reduce competition.

—•—

A note on the cold war: Russia has made much of the fact that the U. S. constantly flies atomic-armed bombers toward her. This is part of the Strategic Air Command's defense tactics.

Russia's tactics are much the same. Our radar, in Alaska, Northern Canada, and on picket ships, continually detects Russian flights this way. We also spot her subs from time to time, in both Atlantic and Pacific.

It's risky for both sides. A slip would mean a major incident. But Washington has no intention of changing policy, short of some hard and fast agreement with the Reds. This is called unlikely in the near future.

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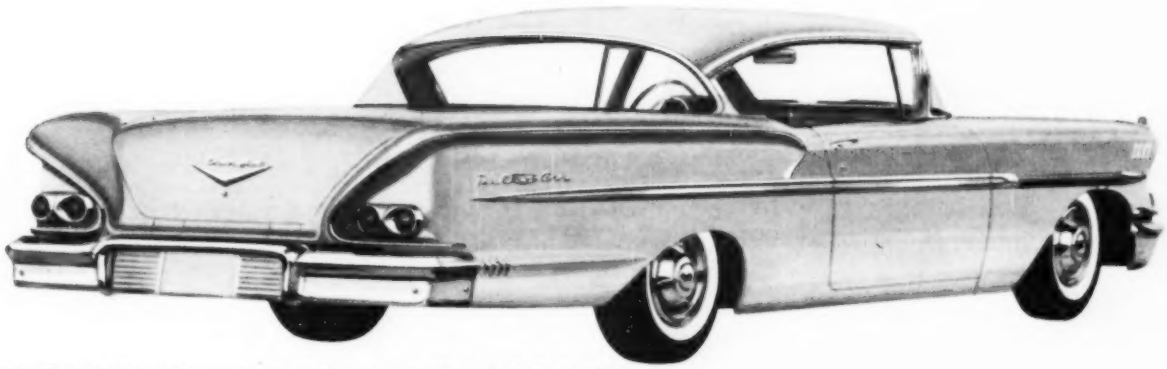
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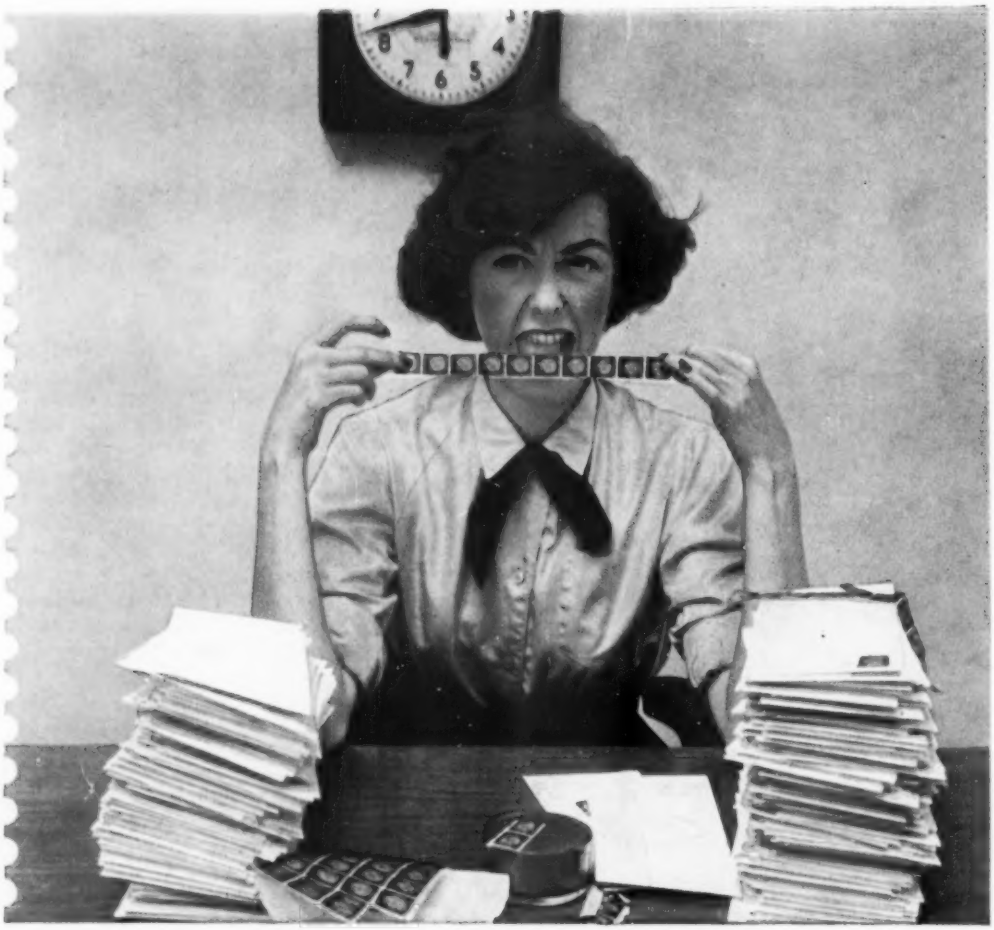


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MANAGEMENT

Getting the Most Out of a Man

Du Pont's Crawford Greenewalt argues for fostering individual thought rather than conformity.

The cult of conformity, the subordination of self to the organization and its established order, must not be allowed to smother the identity of the individual executive.

This thought was expressed by none other than Crawford H. Greenewalt, president of one of the country's largest business organizations—E. I. du Pont de Nemours & Co. He made the point as this week he delivered the third of a series of McKinsey Foundation lectures at Columbia University's Graduate School of Business (picture). He was talking to a group of 600—mostly corporate executives, plus some students and faculty members of the business school. At the close of each of the three lectures, Greenewalt answered questions from the floor for 30 minutes.

In the lectures, spaced two weeks apart, Greenewalt noted the tendency to identify progress, economic or social, primarily with group action. Yet no group is better than its best individuals, he declared, and the trend toward conformity, security, and general avoidance of the personal gamble is a peril to our economic civilization. "The great difficulty today," he observed, "is that the pastime of keeping one's nose clean has infiltrated all levels of corporate enterprise." He was talking against the concept of the so-called organization man.

• **Hardening of the Brain**—Greenewalt points out that the men who occupy today's highest business posts fought their way to the top while individuality was still admired. Those who will be in the same position 20 years from now, he says, must be saved from the freezing of patterns of thought and action that might make them unable to lead when the time comes.

The solution, he says, is to:

• Turn to—or return to—an organizational philosophy that permits a wide variety of individual approaches to the same problem.

• Revise government as well as corporate thinking to restore tangible incentive and rewards.

• Recognize that the uncommon man may be far more valuable than the careful man, and arrange rewards so that the greatest prizes go to the men who are willing to take the greatest risks.

• **The Practice**—Greenewalt is not preaching a principle that he hasn't

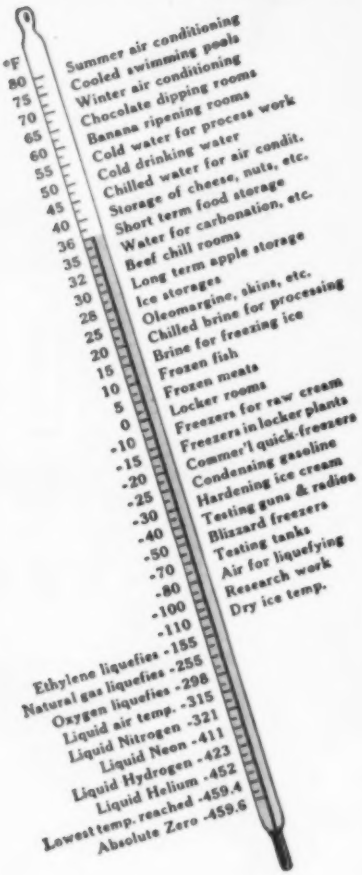


GREENEWALT this week delivered the third of the 1958 McKinsey Foundation lectures to executives and students in the Graduate School of Business at Columbia University.

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seen in practice. His own company, du Pont, abides by the philosophy that he expressed this week at Columbia University, and so does General Motors Corp., with which du Pont has had close relations over the years.

Among du Pont's 34 top executives, says Greenewalt, "no two of them will approach a particular problem in quite the same way, and no one of them could do his job as well if he were required to do it according to some preconceived, generalized executive pattern."

In fact, says Greenewalt, the only thing they have in common is that "they are all very able men and all, in their own way, rugged individualists."

I. The Main Ideas

In this third year of the McKinsey Foundation lecture series, Greenewalt's three lectures fit into a pattern that was established at the start.

Two years ago, Ralph J. Cordiner, chairman of General Electric Co., lectured that big business is here to stay, that it is not in itself a bad thing but does present special problems for management.

Last year, Chmn. Theodore V. Houser of Sears, Roebuck & Co. said that the most delicate and most pressing of these problems is that of the big company's relationships with its employees, suppliers, customers, and the general public. He called for a humanitarian approach to the problem.

This year, Greenewalt focused attention on one phase of this general problem: the relationship of the corporation with its employees, especially the exceptional group at the management level.

• **Submerged**—Over the past 50 years, the proprietorship has mostly vanished, its place taken by the vast, anonymous corporation. Government, educational institutions, and labor unions have all outgrown the control capacity of the single gifted personality.

Indeed, says Greenewalt: "The national conviction seems to be that progress in any field requires the creation of an organization . . . We boast about the size of our institutions and their capabilities. At the same time we distrust the power we conceive the organization may wield in our normal lives." But the myth of corporate power for evil, he adds, is as far removed from reality as Aladdin's lamp.

• **Averaging**—"Any corporation, it seems to me, has its own system of checks and balances and is probably more sensitively responsive to public will than is government itself," Greenewalt goes on. "Any organization represents a cross-section of society—the brilliant and the dull, the generous and





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the grasping, the good and the bad. Grouped together, the weakness of one is compensated by the strength in another. . . . Whatever individual dispositions may be present, it is the average, the composite, which must prevail."

• **Dangerous Pressure**—In this averaging, he suggests, lies some dangers. The larger the number of people involved in any given decision, the greater the pressure for conformity. But the question, he says, is quantitative—how much or how little?

"The hazard is that the very pressures which hold the scoundrel in check will impose, upon the individual, restrictions which stifle the creative urge and zeal for personal achievement. Conformity in behavior—good manners—is a human necessity; conformity in patterns of thought, a human danger. Unfortunately, we have come in modern times to confuse the two."

• **Congestion of Ideas**—In spite of this danger, Greenewalt argues, there is nothing inherent in large organizations that automatically closes the door to high individual performance.

The real trouble arises, he says, "when success causes [the organization] to be so enraptured with its accomplishments that it is moved, like Narcissus, to fashion everything in its own image."

Real progress, he insists, even in group operations, "will be made in direct proportion to the intellectual freedom of action given to the men on the team." He doesn't like educational precepts that grade students on "ability to cooperate with the group," or executive development programs where training procedures are so codified that "they can result in perpetuating a facsimile and in freezing rigid patterns of thought."

• **Sum of the Parts**—By no means, however, is Greenewalt indicating that individuality must run rampant over organizational purposes. The structure may be constant—and must continue—but its function is made up of hundreds of separate tasks. It is the accomplishment of the separate task, rather than the particular technique used to approach it, that should be the criterion. Responsibility, authority, and the right to use individual methods must go hand in hand.

"Society itself suffers when people are allowed to sacrifice identity in the damp laundry of mediocrity," says Greenewalt.

"Contributions to the joint effort," he adds, "will vary in kind as they vary in importance. Some will contribute in brilliant flashes of form; others through their steadiness, persistence, or the grueling and often overlooked grind of hard routine work. The important thing to the organization is that each



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II. How du Pont Does It

Where do you get men who can live up to such expectations, and how do you keep them? Greenewalt's answer rests heavily on du Pont's experience in its tradition of following the principles he preaches. He speaks of a threat and an incentive, working together to keep a man up to his best performance.

The threat is veiled in an opportunity: Let the man do his job his own way as long as he is successful; if he fails, be tough-minded enough to replace him.

The incentive, says Greenewalt, is even more important: Give the man enough promise of reward to make him want to succeed, not only in his current job but at ever higher levels.

• **Own Solutions**—As a man is promoted and gains added responsibility, he is allowed to work out his own solutions to problems. Du Pont believes that if a manager feels he must stand with his hand eternally on his subordinate's shoulder, he is a poor manager, and his subordinate cannot possibly do his job well.

This requires forbearance on the part of the supervising executive, who may frequently have held the same job and who chafes at seeing it done differently.

"But it is the result that counts, and when one looks past method, it is easy to see that, within a given area of principle, there are many ways in which a good job can be done—as many ways, in fact, as there are men to whom the task is given."

• **The Beckoning Carrot**—But allowing the individual to follow his own ways is only the beginning. The corporation must also provide him with sufficient and appropriate incentives. For this, Greenewalt suggests "money."

Greenewalt does not deny the importance of what he calls "environmental factors"—good leadership, assured recognition for a job well done, and "above all, a sincerity [from management] transcending the superficial joviality which sometimes passes for cordial human relations." But these he takes as a "first principle," a basic environment to get any good at all from human effort.

• **Intangibles**—Value of intangibles differs so from individual to individual that Greenewalt looks on them as impractical as a genuine management incentive. When du Pont checked some of its own people on what non-financial rewards would be most appealing to them, "the responses varied so widely that it was difficult to form any pattern."

For example, while one du Pont vice-



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president was "enlarging his quarters and installing a desk the size of a small flight deck," another was having a wall built "to cut down the proportions of his office, which resembled, when he got through, a monastic cell." Some men want to travel, while others want to stay home. Some value a club membership, while others would never use it. And, to some, a wall-to-wall carpeted office means only static electricity.

• **How to Keep It**—The problem today, he finds, is that high tax rates destroy the power of monetary reward at higher levels.

"It is an extraordinary thing that, in a nation devoted to free enterprise, we deny in one breath the very attributes we uphold in another," Greenewalt says. "We admire success but penalize the successful; we cry for talent but tax away its rewards; we boast about our venturesome past but, to today's risk taker, we say we'll not help you if you fail, and if you succeed, we'll take the lion's share."

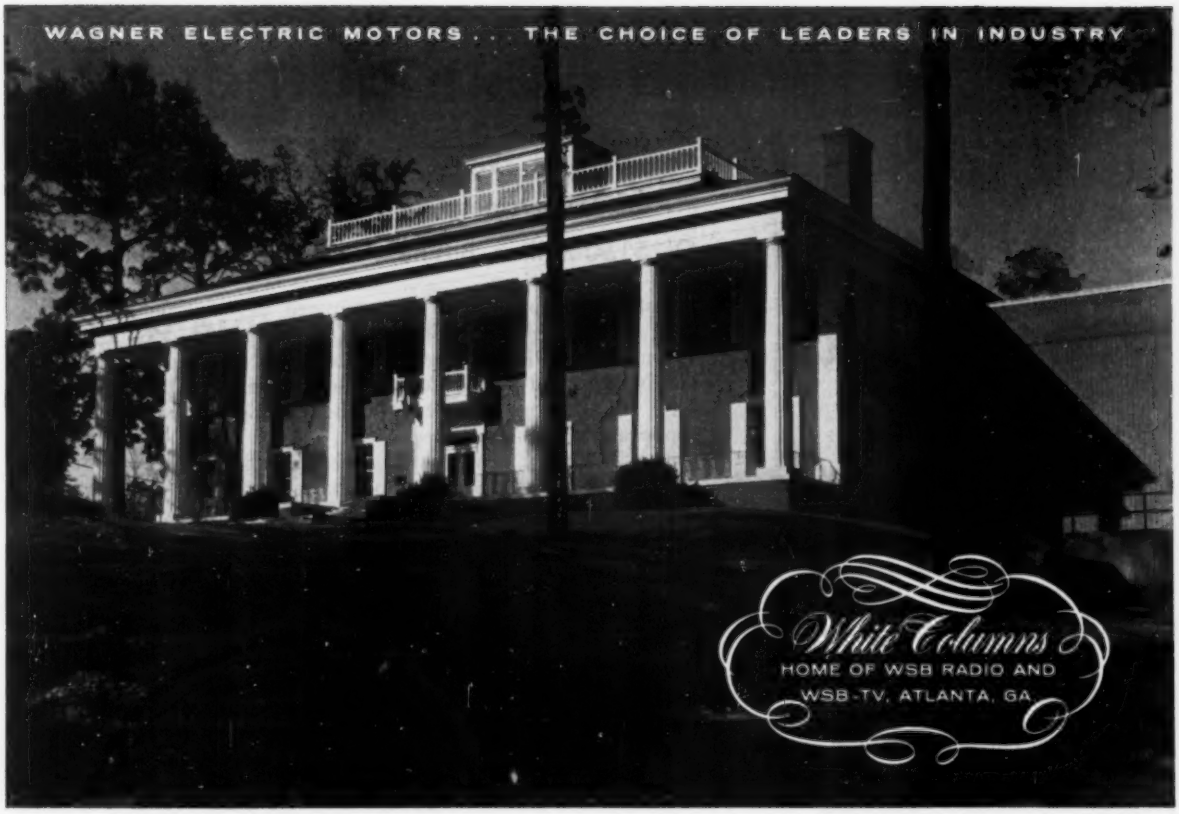
He maintains that "the effect of taxation on individual incentive cannot fail to be profound," that "sooner or later, the difficult road to high executive competence will seem less worth the effort."

• **Essentials**—A good incentive system, he suggests, would include a good environment, salaries at each level appropriate to the work and significantly above the previous level, a bonus plan to offer an extra reward for a job that's well done and that contributes to the success of the company.

At du Pont, this formula is translated into a pay structure with 16 steps from the wage-earner to the top of the ladder. A promotion from one level to the next carries with it a pay increase of about 25%. On top of this pay structure, du Pont has established a bonus plan—"our most important incentive to high performance."

The bonus is determined by the excellence of performance in a given year. Having gotten one is no guarantee of getting the same amount the next year—or of even getting another one. Originally, bonuses were awarded in company stock, to give executives an ownership stake in the company. But when high tax rates too often forced sale of the stock to pay the tax on it, the company reverted to cash awards.

One special aspect of the bonus plan seems to Greenewalt especially significant today. It provides that in setting individual awards, special recognition should be given to men who have achieved a goal "in the face of objections from within or without." "Original thinking has never found a ready-made acceptance," he says, but the corporation must find a way to encourage the risk-taker, the man who will fight for his ideas. END



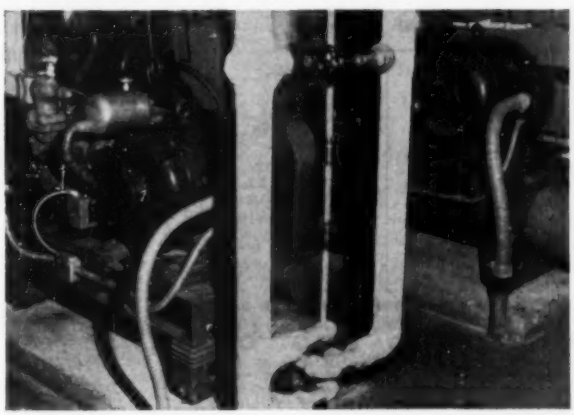
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Here is the heart of WSB's flexible air conditioning system. The 20 hp Wagner Motor in the foreground powers equipment to cool the office zones, the 40 hp motor in left background drives the compressor for the TV studios, and the 30 hp motor at right handles cooling for the lobby and second floor. Three additional motors, not shown here, complete the installation.

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In Management

• • •

Private Universities Got Lion's Share Of $150-Million Business Gifts to Education

Just what happened to the estimated $150-million that business gave to higher education last year is suggested by a report encompassing 910 colleges and universities. The survey was jointly sponsored by the Council for Financial Aid to Education, Inc., the American College Public Relations Assn., and the American Alumni Council.

The 70 "major private universities" in the country got more than 40% of the total giving from business, and private co-educational colleges got another 25%. Government-run schools—state and municipal universities—got a 13% piece of the pie, and the private colleges for men or women just a shade under 10%. Junior colleges were at the bottom of the list, getting less than .8% of the corporation money.

Business was the fourth largest source of voluntary support of the colleges and universities, giving some 9.4% of such contributions. General welfare foundations (principally the Ford Foundation) were the biggest givers, with alumni second, and religious denominations third.

• • •

Plan for Voting Sears Stock

Sears, Roebuck & Co. is not proposing to break up the 19.5-million-share block of Sears stock held by its pension fund, as reported in BUSINESS WEEK (Apr.26'58,p38). The proposal on which stockholders will vote May 12 would allow each employee with vested rights to stock owned by the fund to give instructions to the trustees on how to vote the stock that is credited to him. (Employees get vested rights after five years in the plan.) To assure that these voting instructions are treated as confidential information, Sears would hire an outside agency to tabulate the instructions and provide the trustees with only the totals.

• • •

Management Briefs

C. F. Chaplin has stepped down from the presidency of **Allied Paper Corp.** to a vice-presidency. Arnold H. Maremont, who, with associates, owns a "substantial stock interest" in Allied, adds the presidency to his chairmanship. . . . **Fox Head Brewing Co.** has ended the stalemate in which the ousted chairman and president held seats on the five-man board (BW—Mar.8'58,p99). The two men left the board after the company bought the 52,806 shares held by former chairman Arthur J. Feicht for $68,813, and paid him another $50,000 to cover the costs of the proxy fight he waged last February to win the two directorships. . . . Free coffee has become a recession victim. **American Brake Shoe Co.** has stopped giving two free cups a day to its 10,000 workers, expects to save $200,000 a year by the move. The workers will still get their breaks, but will have to pay for their own coffee. . . . Four of the nine directors at **Firth Sterling, Inc.**, Pittsburgh steel specialty producer, have left the board. According to the company and the four men, the announcement of the four resignations at one time was merely a "coincidence."

A change in name
dictated by growth and progress

ROCKWELL SPRING AND AXLE COMPANY

now becomes

ROCKWELL-STANDARD CORPORATION

On October 1, 1953, a new corporation took its place on the great horizon of U.S. business progress and advancement. The names and reputations of the two parties to this consolidation, The Timken-Detroit Axle Company and Standard Steel Spring Company, had been widely known and respected for almost half a century. It was thus decided that the identities and products of these two merged companies should be retained in the corporate name, either indefinitely, or until such time as events might dictate a change.

Now, four and a half years later, the stated aims and purposes of the new corporation have been fulfilled beyond our own hopes. Progress has been swift and sound under the direction of a management team that has all the requisites to build a solid future. A well planned program of diversification has been carried forward. Our product and marketing base has been substantially broadened. A program of plant improvement, including automation, and new plant construction, has been pushed forward. Of $95,000,000 invested in these new facilities in the past ten years, $32,000,000 has been spent in the past two years.

In addition to broadening our domestic market base, we are making rapid strides abroad as international business continues to expand. We now have operating and manufacturing arrangements in Brazil, Western Germany, and India, and are continuing exploration of profitable connections in other countries.

Here at home we recently purchased a going, heavy duty equipment component business, hydraulic drives, from Westinghouse Electric Corporation. We have just completed arrangements to acquire, through an exchange of stock, more than 80% of the outstanding shares of stock of Aero Design & Engineering Co. of Bethany, Oklahoma. The proposed stock offering will not become operative until after a registration statement filed under the Securities Act of 1933 becomes effective. Aero manufactures the well-known "Commander" and "Commander Alti-Cruiser" executive airplanes.

We will continue our efforts to diversify in fields that offer strong growth potentials.

In light of these years of progress, and especially looking to the future, we find ourselves in the unique position of a business that has outgrown its name.

It is for this reason that we have now adopted the name Rockwell-Standard Corporation – a name that detracts nothing from a successful past, more accurately defines our present situation, and becomes, we are confident, a suitable identification for the broad pattern of our future.

Chairman of the Board

President

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It takes many things to make better fluorescent lamps. That's why ordinary fluorescents cannot match Sylvania lamps for light output, lamp life and dollar-for-dollar lighting value.

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Tests in the laboratory and working installations demonstrate that Sylvania lamps consistently deliver more light.

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Sylvania's greater maintained brightness means 7 lamps free for every hundred you use

Sylvania fluorescents maintain their greater brightness throughout useful life. For example, at 3,000 hours, in a single-shift operation, 100 Sylvania lamps deliver the light output of about 107 ordinary fluorescents. In effect, you get a dividend of light equal to 7 free lamps . . . more light-per-lamp from the power you pay for.

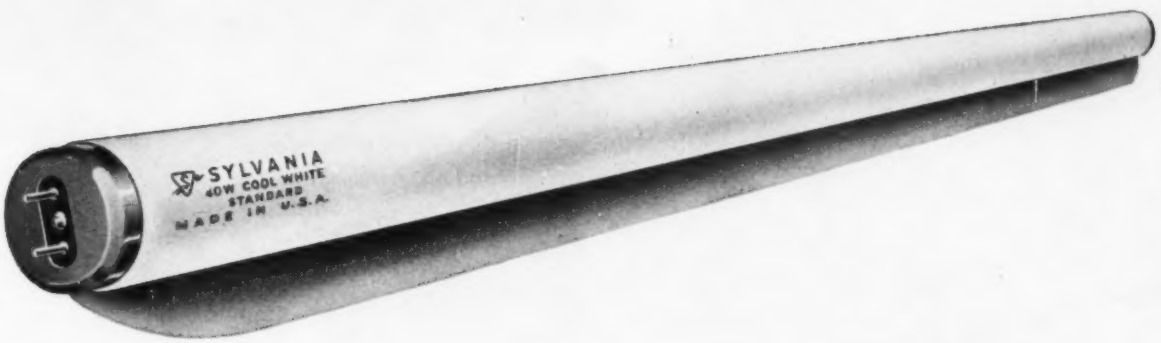
Sylvania welds all bases . . . eliminates faulty lamp contact

Sylvania welds the tube-to-base contact points in all its fluorescent lamps. Other brands use soldered contacts.

By welding, Sylvania completely eliminates the corrosion caused by soldering. Faulty lamp contact so common with ordinary fluorescents is eliminated. As a result, Sylvania fluorescents burn brighter far longer . . . save dollars and time in lamp maintenance.

Only Sylvania's exclusive coating process homogenizes phosphors for maximum brightness

Year after year, Sylvania lamps have delivered more light for a far longer time than ordinary fluorescents because of superior phosphors. In fact, only now are some other brands being introduced with phosphors of a quality which Sylvania has long since improved.



In addition, Sylvania uses an exclusive coating process which more uniformly distributes these superior phosphors throughout the tube. This unsurpassed uniformity is made possible by homogenizing the phosphors—and, in itself, contributes a minimum of 3% greater brightness over other processes now in use.

Sylvania lamps are 99.9% free of performance defects

Every lamp that leaves the plant is subjected to the infallible scrutiny of electronic devices that test and inspect for every possible flaw. One unit, for example, is so critical it can detect, in a fraction of a second, a lamp leak that would otherwise not become apparent until after many months of use. In this way you are assured of the highest lamp quality and performance.

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1957's Top 20 Retailers — They Moved Up

1957 Rank	Name	1956 Rank	1957 Sales (in thousands)	% Change from '56	Earnings 1957 (in thousands)	% Change from '56
1.	Atlantic & Pacific Tea Co.	1	$4,500,000	4.6	NA	
2.	Sears, Roebuck	2	3,600,882	1.3	$161,058	−2.3
3.	Safeway Stores	3	2,117,314	6.4	30,907	21.6
4.	Kroger	4	1,674,124	12.2	20,635	20.9
5.	J. C. Penney	5	1,312,278	1.6	49,410	5.6
6.	Montgomery Ward	6	1,073,799	2.7	29,697	−17.2
7.	American Stores	8	838,000*	7.5	10,391*	7.2
8.	F. W. Woolworth	7	823,895	2.2	33,358	−2.3
9.	National Tea	9	681,131	10.3	8,053	14.9
10.	Federated Dept. Stores	11	635,591	5.7	24,973	6.2
11.	Allied Stores	10	632,813	2.8	12,351	−13.4
12.	Food Fair Stores	12	600,000V	9.1	9,500V	10.5
13.	Winn-Dixie Stores	14	575,000V	10.6	12,000V	20.0
14.	May Dept. Stores	13	533,657	2.3	20,222	−2.7
15.	First National Stores	15	521,000V	2.8	8,600V	7.0
16.	R. H. Macy	16	454,166	5.5	6,850	0.2
17.	Colonial Stores	17	442,152	4.5	6,226	1.1
18.	Grand Union	19	427,871	14.4	5,813	15.1
19.	Jewel Tea	x	414,466	7.5	6,961	9.8
20.	W. T. Grant	18	406,337	6.7	9,718	8.7

*BW Estimate V Company Estimate NA — Not Available x — Not on last year's list

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The Food Chains Lead the Way

In both sales and profits, gains by the grocery stores outdistance the field. But, as in 1956, each of the top 20 retailers improved its sales volume. The only profits declines occurred among the non-food stores.

Sales and earnings figures in the table tell a pleasant business story—1957 was a good year for the nation's top retailers.

As in 1956, every company among the top 20 increased its sales volume during the year, and most of them also improved their profits. The gain by the group as a whole shows up in the threshold of admission to the top 20. A year ago, it took annual sales of $366-million to put a retailer into the club; this year, it took $406-million.

• **Tapering Off**—There's one footnote to this success story—the rate of growth continues to taper off, as it has for several years. For most retailers, the percentage gain in sales last year above 1956 figures was considerably below the gain of 1956 over 1955, and so on. Only two retailers—both of them food chains—bucked the trend last year: Safeway Stores, Inc., and National Tea Co.

The story is much the same in the profits column: Most companies showed smaller percentage gains than a year ago. The exceptions—again they are food chains—Kroger Co., Food Fair Stores, Inc., and Winn-Dixie Stores, Inc. Their net earnings actually rose at a higher rate.

However, five of the big retailers last year suffered a decline in profits, compared with only two in the previous year. The five losers include two mail-order houses, a variety chain, and two department store chains.

• **Reshuffle**—The list of top retail merchants shows several changes from last year. A newcomer, Jewel Tea Co., Inc., bumped last year's No. 20—S. S. Kresge Co.—off the list and, in fact, moved ahead of W. T. Grant Co. to take 19th place.

Jewel Tea's merger last year with Eisner Grocery Co. was chiefly responsible for its making the list this year, but on the basis of an adjusted volume figure for 1956, Jewel still showed a 7.5% sales increase for 1957.

Among other changes last year, American Stores Co. pulled ahead of F. W. Woolworth Co. for 7th place, fast-rising Winn-Dixie edged up another notch into 13th place, ahead of May Dept. Stores Co., and Grand Union Co., which first made the list last year in 19th place, rose to 18th—the spot held last year by W. T. Grant.

In the non-food category, Federated Dept. Stores outpaced Allied Stores Corp. to reach 10th position on the list. This makes Federated the nation's leading department store chain.

I. Food Stores Richer

As usual, food chains walked away with most of the honors in sales and profits increases. Although they were already at high levels, Safeway and Kroger made strong gains last year. Safeway, the country's second ranking food chain, gained 6.4% in sales and 21.6% in profits; Kroger, No. 3 food chain, gained 12.2% in sales and 20.9% in net earnings.

For both chains, these records are part of a continuing story of growth. Safeway went under new management in 1956 and that year showed a profits gain of 86.5% on a 3% increase in sales. In 1956, Kroger boosted sales by 22.5% and profits by 18.8% over 1955.

Grand Union is another fast-growing food chain that stood out in the crowd last year. In 1956, the chain increased sales by 32.2% and profits by 40.9%;



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". . . 'if business conditions improve in the latter half of the year . . . operations for the full year of 1958 may compare favorably with those of 1957' . . ."

TOP RETAILERS starts on p. 59

last year, it led all the top 20 retailers in its 14.4% sales increase and it chalked up a healthy 15.1% jump in profits.

Winn-Dixie Stores, a Southern chain whose sales volume has more than tripled since 1950, is also high on this year's list with a 10.6% increase in sales and a 20% gain in profits.

• **Still Growing**—Behind such figures as these is the history of explosive growth among supermarket chains since the war. During this period, food chains have been gobbling up smaller companies, opening new and bigger stores, and weeding out less productive units—all at a headlong pace.

Grand Union, for example, opened 32 new markets last year and bought another 10 stores, while it closed 15 outmoded stores. At yearend, it was operating 381 supermarkets. Undampened by the recession, the chain plans to open another 40 markets this year. According to Pres. Lansing P. Shield, "very few stores will be closed, since the program of replacing or eliminating smaller, outmoded stores has been virtually completed."

Kroger Co. opened 140 new stores last year, made major remodeling in 37 others, and closed 195 smaller, older stores. It ended the year with 1,421 units, compared with 1,476 at the end of 1956, but its addition of larger units increased store space by 1,174,000 sq. ft. In the current year, Kroger plans to add 100 more stores.

Food chains are firmly convinced that their aggressive expansion programs, as much as higher food prices, are responsible for their progress in sales volume and in profits. American Stores will continue to expand, with the comment that it is "optimistic" about 1958. Last year, this chain opened 47 stores, closed 106, coming out with 844. It had planned to open more stores last year, but tight credit and poor weather restrained it somewhat.

Food Fair, large Philadelphia chain that has shown remarkable growth, is aiming at opening 50 new stores this year and at a sales volume of $700-million.

II. Other Stores Hungry

For the non-food retailers among the top 20, last year did not add up to so happy a picture. In the struggle against rising costs and reduced profit margins, they came out with sales and profit gains generally below those of the food chains. Five of the nine retailers in this group ended the year with a decline in profits.

Both mail-order houses—Sears, Roebuck & Co. and Montgomery Ward & Co.—suffered profit declines, with Ward down a substantial 17.2%. Ward gives several reasons for this drop, primarily a $3-million payment into its pension plan. Ward is also in a profit squeeze due to a wage increase that was granted by the mail-order house during the year and to a clean-out of inventory during the fourth quarter at reduced margins.

"Our inventories are now the cleanest they've ever been," says Ward's financial vice-president, Charles J. Kushell, Jr., "and, in view of the present soft market, we're glad we acted when we did."

• **Allied Sags**—Lower gross margins and higher wages also figure in Allied Stores' 13.4% drop in profits, according to Chmn. B. Earl Puckett. According to Puckett, the trouble started in the second quarter when consumer purchasing power weakened while the cost of doing business rose and margins narrowed.

As for the current year, Puckett says the first half will run lower than the first half of last year. But he points out that the second half is the important period for department stores and, he adds, "If business conditions improve in the latter half of the year . . . operations for the full year of 1958 may compare favorably with those of 1957."

• **Federated Gains**—In pulling ahead of Allied Stores for the top spot among department stores, Federated racked up a 5.7% gain in sales and a 6.2% gain in net earnings.

Federated is taking its new honor calmly, pointing out that in terms of earnings—which it considers the really important yardstick—it has been the leading department store chain for several years.

Vice-Pres. John F. Lebor cites the chain's efficient management and its success in meeting costs as the reason for improved sales and earnings performance. Federated has a policy of concentrating on fewer but bigger units than its nearest rival, Allied. Its aim is to make its stores the dominant ones in each community in which it is located.

Last year, for instance, Federated produced its $635-million in sales volume in 38 stores, while Allied operated 84 stores to derive its $632-million in sales. **END**



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In Marketing

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Consumers Continue to Hold Out Against High-Tag Merchandise

Wary consumers are still planning to buy even fewer durable goods than in October, according to the National Bureau of Economic Research.

This is the initial report of the consumer study survey that the bureau took over from Consumers Union. It parallels similar studies by the University of Michigan's Survey Research Center for the Federal Reserve Board and private industry.

NBER's sample of 25,000 subscriber-members of Consumers Union—admittedly a group that is not typical of the entire population—shows **that plans to buy new cars within the next six months are down 20% from October. Intentions to buy major household items are off about 10%.**

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Fruit Co-op Will Stick to Avocados, Sees Soft Spots in Diversification Plan

Calavo Growers of California, major U.S. marketer of avocados, is deemphasizing its program of diversification aimed at adding other fruits and vegetables to its line (BW—Jun.1'57,p155).

The fruit-growers' co-op announced that William P. Black, general manager and chief planner of the enlarged marketing idea, has resigned over "unreconciled differences of policies." A spokesman says that growers want more emphasis on selling avocados and **are upset over the high cost of developing a market for other produce.** For the past year, Calavo has fallen short of its goal due to (1) difficulty in obtaining other fresh fruit, and (2) a record crop of lower-price avocados in Florida.

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Blauner's Specialty Store in Philadelphia Switches 100% to the Discount Business

Philadelphia retailing got a different look when the 47-year-old Blauner's closed its doors as an orthodox women's specialty store and opened last Wednesday as a discount house. It's the first large Philadelphia store to go this route on a storewide basis.

Justin J. Blauner, vice-president, says the store will offer quality fashion merchandise at discount prices. It won't carry rejects, seconds, and the like. Nor will it trade on branded labels with high list prices.

Two years of study on how to reduce prices preceded the changeover. A key question was whether suppliers would go along. "We are thrilled with their response," Blauner reports. The store cut its supplier list from 4,000 to 300. This means volume buying, and a 10% lower markup than before. It will also cut record-keeping costs by 25%. The store is eliminating delivery, mail orders, charge accounts, and is stressing self-selection.

The store spent some $100,000 on physical changes in making the switch. The move should increase stock turnover, and up sales by 50%, Blauner feels.



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FINANCE

Hotels: Down, but Fighting

● Sharp drop in room occupancy rates, and rise in food and labor costs, squeeze profits from both sides.

● But postwar surge in property values holds up—and hotel stocks outperform the market averages.

Chicago's hotel operators have their own recession barometer—one that registers the shifting economic weather in a good many industries in addition to the hotelman's own. When representatives of the machine-tool industry met a few weeks ago in Chicago, for example, the hotelman's barometer registered this change: Only half as many company wives were present as at last fall's convention in French Lick, Ind.

Over-all, the barometer has been registering a sharp decline in convention attendance, including conventioneers of both sexes. An officer of a major national hotel chain complains, "Where last year a company might send seven or eight of its people to a meeting, this year it sends only one."

The drop has hit Chicago hotels especially hard. At Hotel Corp. of America's Edgewater Beach Hotel, first-quarter profits fell almost 10% below last year. Sheraton Corp. of America says "business is off considerably" at its two Windy City hotels.

But the pinch isn't limited to Chicago. The national hotel occupancy rate in first-quarter 1958 averaged 68% of capacity, down from 72% in 1957's first quarter, and lowest for any quarter since 1940, according to Horwath & Horwath, accountants and consultants to the hotel industry. The sharpest declines were in Chicago and Philadelphia, where first-quarter occupancy rates dropped six percentage points below a year ago. But New York, Washington, and Cleveland fell five points.

In terms of profits, the picture isn't quite so black. During the first quarter, a 3% increase in room rates partially offset the over-all four-point decline in occupancy from a year ago.

• **Revenues and Profits**—Keeping rooms filled is the prime concern of hotelmen. For most hotels, room rents provide the greater share of profits—as much as 90% of profits for many. There are many other sources of revenue, of course, especially for the big city commercial hotels, but most of them provide nowhere near so much profit as room rents.

From the revenue side, Horwath & Horwath, in a just-published study of the hotel industry, breaks down 1957 revenues this way:

- Room sales: 47.4%
- Food sales: 31%
- Beverage sales: 12.3%
- Telephone sales: 3.1%
- Store rentals: 1.5%
- Miscellaneous: 4.7%

On the profit side, the breakdown is quite different. Allan Levian, partner in Amott Baker & Co., New York investment banking house specializing in hotel securities and real estate, says:

"The room business makes the profit for the hotel. The beverage business is second most important. Food business is incidental, and not usually profitable. Hotels almost never make any money on their dining rooms, and night club rooms are rarely profitable."

• **Bulging Cost**—For the hotel trade, as for many another business, it's a double squeeze; while hotelmen struggle to build sales, they must fight to hold down costs. Unhappily, two of the biggest cost items, payroll and food—respectively, 37.3% and 10.9% of total costs—are hardest to rein in. Hotel Corp. says its March food costs rose 2% over February, 9.8% over March, 1957. Sheraton reports food costs running 5% above a year ago.

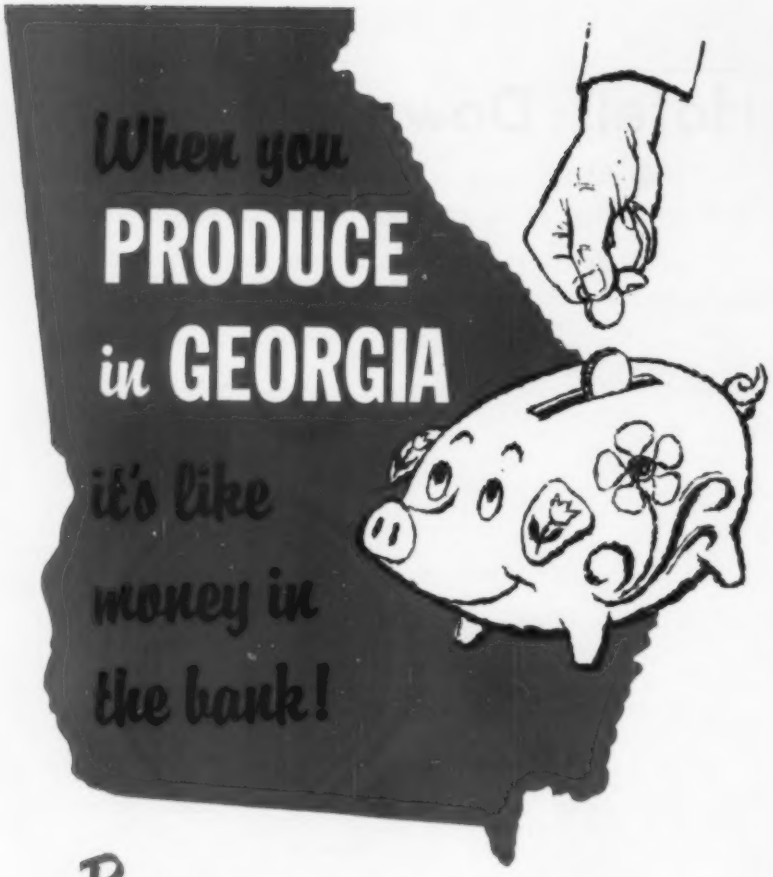
Labor costs for Hotel Corp. are 4% to 6% ahead of a year ago, "mostly due to two-year and three-year contracts with built-in wage hikes."

But the decline in occupancy rates completes the squeeze; Roger P. Sonnabend, vice-president of Hotel Corp. in charge of hotel operations, says, "Because of decreased business it hasn't been possible to pass very much of the cost increase along. Most of it has had to be absorbed."

• **Better to Be Big**—In this situation, the bigger hotels and hotel chains are faring better on the whole. The reasons, ticked off by Amott Baker's Levian, include the advantages of buying in quantity, of better financing terms, of central design staffs, of advertising on a national basis, of referring business from one hotel to another in a chain. In addition:

• Big chains are diversified regionally. Though business of Hilton Hotels Corp. and Sheraton is sliding in New York, they are practically sold out in the city of Washington.

• The chains have been able to buy important convention hotels in



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major cities, and conventions are still a source of profitable business.

• Some big hotel operators, such as Knott Hotels Corp., have branched out into the more profitable motor hotel business.

• **Profitable Plowback**—From the investor's point of view, there's another feature of the hotel business that at first glance seems to be short-changing him—and has, in fact, reduced his immediate dividend return. Most of the heavy postwar costs of modernization and alteration of hotel properties have been paid out of earnings.

But even for the investor, there's another side to this coin: The values of hotel properties in postwar years have increased more than the amount of cash plowed back. One reason for that: A third to a half of improvement costs can be charged directly to operations instead of being set up on the books as capital items. Say a hotel installs an air-conditioning plant; its own maintenance staff can handle the extensive changes in electrical wiring and plumbing, and this expense is tax deductible as part of the cost of doing business. Of the total air-conditioning cost of $1-million, perhaps only $700,000 has to be financed out of retained earnings. And the improvement adds more than $1-million to the hotel's value.

Fast write-off tends to reduce reported earnings by more than the actual decline in the value of the buildings. The 1954 changes in tax laws governing depreciation permitted companies to depreciate hotel properties at an accelerated rate in the early years of their life. Many hotel companies took advantage of this to start new buildings. The postwar real estate boom has also improved market values of hotels.

• **Books and Sales Price**—What all this means in dollars and cents can best be illustrated by the case of a big New York hotel that is currently in process of being sold, with the closing scheduled for early August.

The property is carried on the books for about $2.8-million, written down from a cost of $4.5-million. The hotel is owned and operated by a single-hotel corporation, whose securities are traded over-the-counter. Present market prices of the stock put a valuation of only about $3-million on the equity interest; and about $2.2-million in bonds are now outstanding. Yet the purchasers are willingly paying $8.4-million.

• **Market's View**—Despite the lull in hotel operations, up to now the stock market hasn't evidenced any real concern about the near-term future of the hotel industry. Amott Baker's hotel stock index shows hotel securities up about 11.7% over their levels at the beginning of the year. In the same period, Standard & Poor's 425-stock industrial average advanced 7.7%. END

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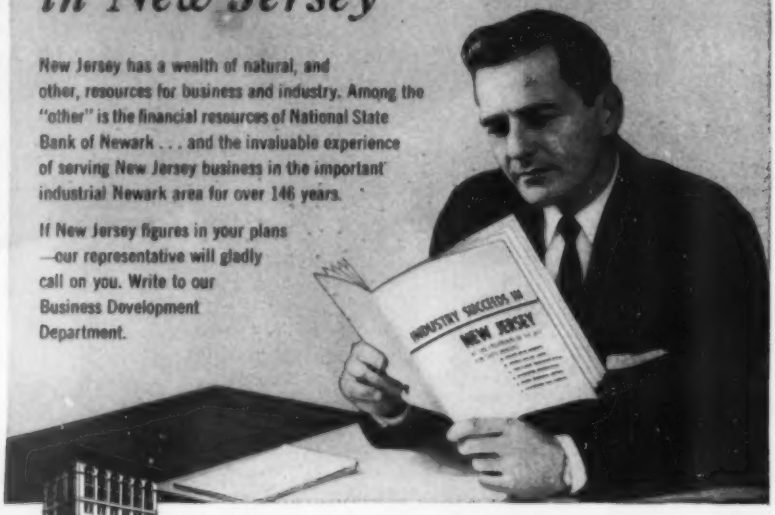
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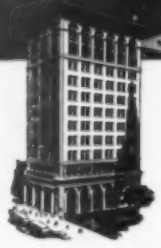
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Wall St. Talks . . .

. . . about those falling earnings . . . and Uncle Sam's loss . . . expanding fund . . . new market high questioned.

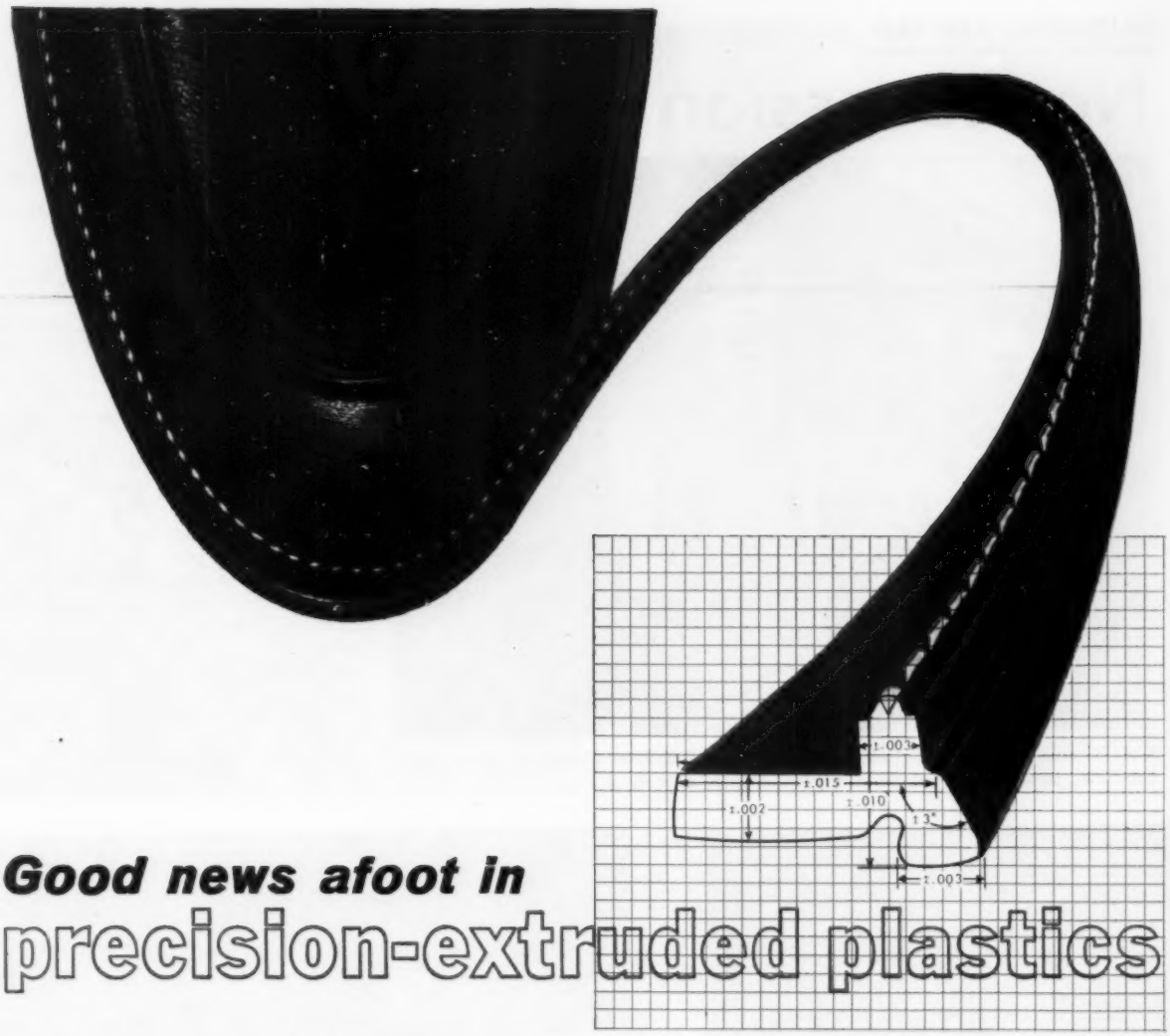
The drop in first-quarter earnings (BW—May3'58,p32) may be as much as 35%-40% below the 1957 level, shrewd Streeters believe. Apparently, the biggest losers will be autos (down more than 50%), the steels (60%), and the rails (80%).

Uncle Sam was a big loser, too, the same analysts point out. As horrible examples, they note that: (1) U.S. Steel, Bethlehem, and Republic collectively owed $110-million less taxes in the first quarter than in the year-before period; (2) GM and Ford together were off $209-million; (3) Chrysler moved from a 1957 tax bill of $52-million to a $16-million tax credit this year; (4) ten other big companies collectively owed $122-million less this year in federal taxes.

The One William Street Fund, Inc., the new open-end investment company sponsored by Lehman Bros. (BW—Apr. 12'58,p142), will boost its initial stock offering to $87.5-million—that's 7-million shares at $12.50 apiece, instead of the 3-million shares originally planned. Streeters confirm the fund's claim that the move is "in response to strong public demand." The underwriting group, headed by Lehman Bros., now numbers 700, largest ever for a new common stock offering.

"Illogical": That's how many Street conservatives describe the Big Board's rally to a post-October high. They point out that the climb is in the face of a most discouraging flood of earnings reports and a growing number of dividend casualties. They blame the "sweet talk" that softened many of the latest poor reports, and fear that it will be a long time before these earnings live up to their soothing ballyhoo.

Favorite common holdings of 245 bank-administered common trust funds early this year were these, says a survey: GM, Standard Oil (N. J.), du Pont and Christiana Securities, Union Carbide, AT&T, Texas Co., Socony Mobil, Phillips Petroleum, and National Dairy Products. Their chief buying targets in 1957 were U.S. Steel, bought by 24 trusts; Bethlehem, bought by 22; Socony Mobil, bought by 13. Chief selling targets were Allied Chemical, sold by 13; Continental Insurance, sold by 10; Inland Steel, sold by nine.



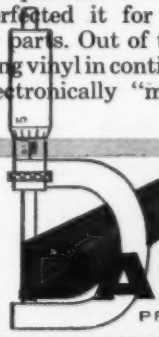
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BUSINESS ABROAD

No Recession in Tourist Trade



KYOTO streets are becoming crowded, as "foreigners" discover Japan—and the Far East. Last year, Japan entertained about 128,000 tourists, expects at least 150,000 this year.

Travel abroad may hit a peak this year, with the trend toward out-of-the-way places.

Evidently unruffled by the recession, American tourists are heading overseas like commuters catching a rush-hour train. The main season—May 1 to Sept. 15—has begun. If travel bookings to foreign countries continue at the present rate, 1958 may set a postwar tourist record.

It's not just Western Europe, the traditional stamping ground, that is luring Americans. That region, of course, is still tops, with an expected 10% rise this year over the 600,000 visiting there during 1957. But Americans are also discovering Japan (pictures) and the glamour of South Pacific island cruises. That area is showing one of the fastest rates of growth for vacation travel.

• **New Mecca**—The most dramatic change this season is the surge in tourist business behind the Iron Curtain. Travel agents estimate that 5,000



RESTAURANTS feature native dishes, try to compensate for shortage of good hotel accommodations.







SHOPS stock up on fans, cameras, kimonos, jewelry, decorative screens, and souvenirs in anticipation of heavy buying.

SIGHTSEEING trips to Buddhist shrines draw the crowds. About 60% of visitors to Japan are American.





TEMPLE of the patron saint of geisha girls proclaims Japan is still an exotic land.

MOSS GARDEN, with its paper umbrellas for rainy days, is one [illegible] Japan's tourist trade is increasing at an annual rate of 20%.



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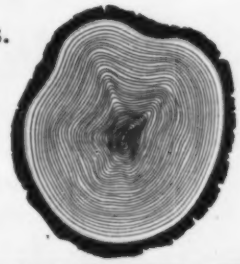


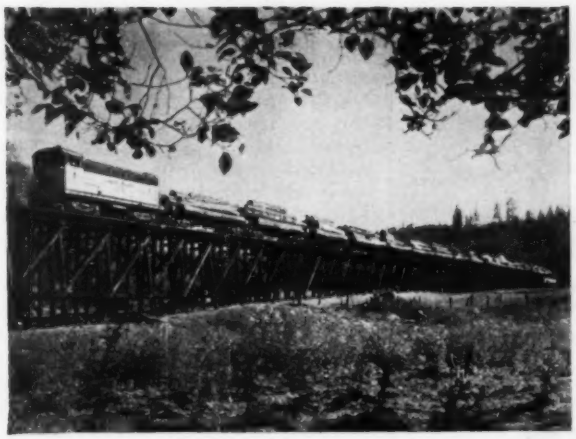
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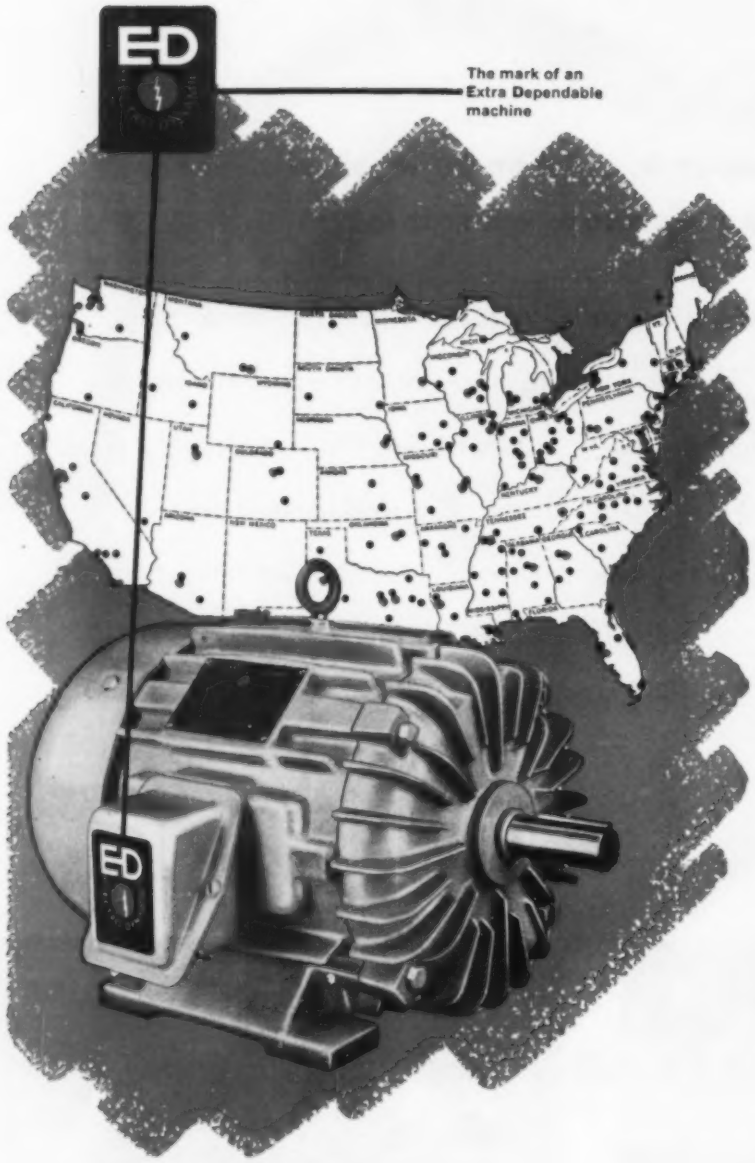


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Americans—double the 1957 figure—will head for Moscow and other key cities inside the Soviet Union this year. While Intourist, the Soviet tourist monopoly, will handle the bulk, American Express—through its office just opened on Gorky Street in Moscow—will grab an increasing share, for cruise-ship stopovers at Black Sea ports as well as for air trips to Kiev.

• **Same Revenue**—In dollar volume, American Express' business over-all may jump as much as 20% this year. But the total outlay by tourists—$1.9-billion in 1957, according to Dept. of Commerce estimates—isn't likely to rise much.

The 1958 tourist has his eye on cheaper, out-of-the-way spots to visit. Most travel agencies figure that the increase in hotel rates and railroad fares has boosted tour prices around 10% over last year.

I. Bait for the Tourist

At first glance, overseas tourism seems to have a built-in balance, so that a new spur to travel comes along just at the right time to offset unfavorable factors.

In the first quarter of 1957, the aftermath of the Suez crisis put a crimp in foreign travel. But by yearend, the travel industry was hitting new highs. The new jet airliners, scheduled to go into service late this year, are counted on to compensate for the delayed effect the recession may have on tourism.

• **Lower Fares**—The fillip to travel right now is the new economy fare inaugurated by the airlines on Apr. 1. This fare—$453.60 for a New York-London round trip—is $113.40 less than the $567 tourist fare. Mostly because of this new service, Trans World Airlines traffic eastbound to Europe and the Middle East was up about 50% during April over the same month a year ago. Pan American World Airways' advance bookings for June are 20% ahead of last year's.

Travel experts guess that in time, tourist-fare traffic may be squeezed out of business. Already most tourist-fare travelers are downgrading their ticket purchases to the economy flights, while first-class travel—often on the expense account—continues to hold strong.

One sign of the airlines' competition for the "economy" traveler was this spring's fight over what constituted an economy-flight sandwich. Some travel officials figure that it won't be long before airlines serve liquor and even fancier food on the so-called economy flights.

Another spur to travel this year is coming from the Brussels Worlds Fair, the Lourdes religious centennial, and the 10th anniversary of the founding of Israel. For instance, the French have

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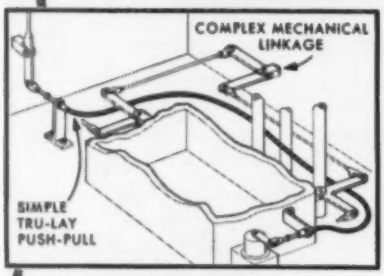
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The six bulletins and booklets in the DATA FILE provide a clear picture of how the Flexibility of Tru-Lay Push-Pull Remote Controls simplifies Design and Assembly ... cuts costs for Engineering and Production.

Push-Pull DATA FILE

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put into service a special express train running from Brussels to Lourdes via Paris.

• **Drive Your Own**—One drawing card for tourists is the rapid expansion during the past year of the car rental business. American Express and Hertz have joined forces to push this in Western Europe, with special tours arranged that outline countryside inns, hotels, and pensions to stop at after each day's jaunt. One side effect is the rise in purchases of foreign cars by Americans abroad; in Britain alone, 16,000 Americans bought cars last year to ship back home.

• **On the Deep**—Steamship lines aren't doing so well as the airlines. "There won't be an empty bed on the big ships," says one top travel official. But shipping lines are getting a decreasing share of the tourist industry's growth—46% so far this year compared with 49% for the same period last year. Available cruise tonnage has doubled in the past three years. But many travel officials estimate that if the recession has any effect on travel at all, it will cut into the expensive cruises. While 10% down, pay-later plans are spurring middle-class travel, the rich tourist class usually pays the whole bill at once—or skips the trip.

• **Charter Flights**—The startling phase of the boom in air travel is charter flights. Flying Tiger expects to do a $1-million-plus business each month during the peak season carting tourists to Europe and back for around $300 per person.

More and more companies—such as General Electric and Hercules Powder—are arranging charter flights to give employees a cheaper trip abroad. Republic Aviation, which handled a 123-worker group last year, is sending over 200 this year by charter plane.

Nationality groups such as Italian-American societies are also using charters in increasing numbers. (Roughly 40% of American tourists visit or stay with relatives in Europe, according to the Dept. of Commerce.) Though the returns on charters are smaller than on scheduled runs, the regular transatlantic carriers are beginning to take the business seriously.

II. Where They Go

Not all foreign countries are getting the share of U.S. tourist dollars that they would like. And in some countries—Mexico, as one example—tourism is counted on as the biggest single dollar earner.

Here's a quick rundown of key areas around the world:

In Western Europe, Belgium—with its grandiose Worlds Fair—is showing the biggest gain. Some 130,000 Americans passed through Brussels last year;

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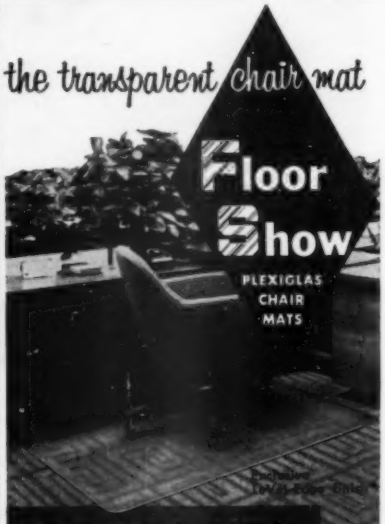
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this year the figure will be 400,000-plus.

Britain, which showed a 7% tourist rise last year (despite Suez), is sure of a 10% increase this year. In 1957, Britain took in $131.4-million from an estimated 263,000 American tourists.

France saw a 13% dip in numbers of American tourists last year. The same problem plaguing tourism last year—the high cost of living in France—still exists. But France is counting on Lourdes to boost travel this year. To try to reduce tourist costs, the government has eliminated tour taxes and lowered gasoline prices for visitors paying in non-franc currencies. Last August's 20% franc devaluation is also making travel a little cheaper.

In the Soviet Union, Intourist plans to open new auto routes—from Finland through Leningrad to Moscow, from Romania and Bulgaria to Yalta. Though founded in 1920, Intourist has expanded rapidly just in the past two years, now boasts 5,000 employees (including 400 interpreter-guides). Soviet jets operated by Aeroflot, the airline monopoly, will probably begin flying London to Moscow this summer. Now American Express has a variety of airline-or-ship tours through Europe and Russia priced from $1,680 to above $2,000.

In the Far East, Japan is the new discovery for tourists—with hotels in Kyoto, the ancient capital city, booked solid. Tokyo officials expect 150,000 tourists in 1958, compared with 128,077—with roughly 60% Americans. So far, Japanese ingenuity has not been applied to tourist development—visitors last year left behind a piddling $65-million. But the Imperial Hotel is adding an annex, other hotels are being planned, and Japan Airlines (JAL) is providing plush service from North America, with jets scheduled for 1961.

In Latin America, the tourist business is still small—except for Mexico and the Caribbean. Mexican officials think the U.S. recession will help business. But travel agents in Mexico City report a sharp downturn. While Cuba and Haiti are hurting from political troubles, the new West Indies Federation of British Islands is spurring Caribbean travel. Cheaper airline fares to distant points in South America are also helping to push tourist travel.

In Africa, it's still the safari that lures the tourist dollar. American Express claims the big-spending safari customer is turning to Iron Curtain travel as a new vacation twist. But American Express is dreaming up a new twist of its own to keep African travel alive: a trip via "convertible" helicopter through Africa, leapfrogging over the jungles and converting the plane into a "roof and bed" for overnight stops. **END**

Tubexperience in action



When fabrication work is done, and all other inspections run off, nuclear components still face one acid test. At the Nuclear Products Division of Superior, X rays are used to explore the component's inner structure, revealing any defect and verifying the complete weld penetrations that were achieved in controlled atmosphere welding chambers.

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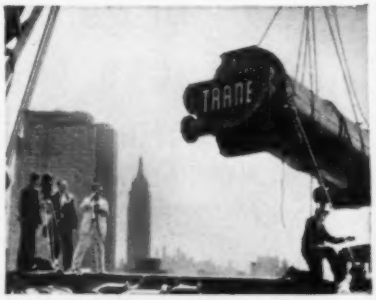
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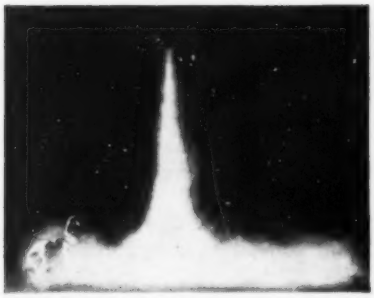
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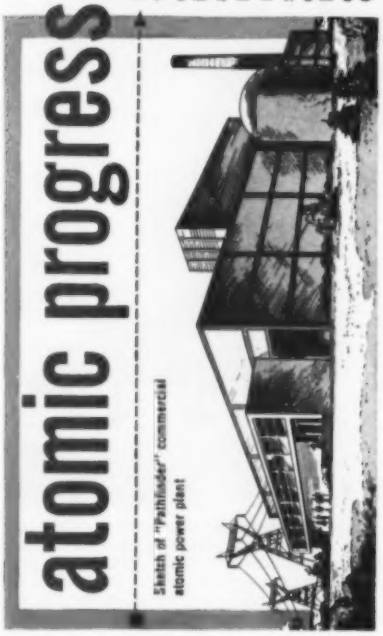


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Organized as Central Utilities Atomic Power Associates, these utilities will share in the research and development costs: Northern States Power Co., Central Electric and Gas Co., Interstate Power Co., Iowa Power and Light Co., Iowa Southern Utilities Co., Madison Gas and Electric Co., Mississippi Valley Public Service Co., Northwestern Public Service Co., Ottertail Power Co., St. Joseph Light and Power Co., Wisconsin Public Service Corp. . . . PIONEER SERVICE & ENGINEERING CO., 231 S. La Salle St., Chicago, Ill.

In 1952 Pioneer joined with other groups, all reporting to the Atomic Energy Commission, for constant study of atomic energy application. Today Pioneer is qualified as a consultant to industry in the application of atomic reactor systems to the generation of electric power.

Presently, Pioneer is acting as architect-engineer and supervisor of construction of the 66,000 kw commercial atomic power plant shown here. Allis-Chalmers Mfg. Co. is the prime contractor. Scheduled for 1962 completion, the plant, for the Northern States Power Co., will be known as the "Pathfinder".



Sketch of "Pathfinder" commercial atomic power plant

In Business Abroad

• • •

U. S.-European Group Ready to Start Development of African Iron Project

Societe des Mines de Fer de Mekambo—a $350-million joint enterprise of U. S. and West European companies—will start exploitation of rich iron ore deposits in French Equatorial Africa.

The Mekambo project has been under study for two years. It includes a 460-mi. railroad to haul ore from Mekambo to the Atlantic Ocean. Completion is scheduled for 1963-64. By 1967, it is expected that annual production will reach 10-million tons.

Roughly 50% of the stock is held by Bethlehem Steel Co., 34% by French interests, and 16% by steel and mining companies in Italy, West Germany, Belgium, and the Netherlands. Participating companies are entitled to share in ore output on the basis of ownership.

• • •

West European Steelmakers Shave Prices To Keep Their Grip on Export Markets

To keep the door open to softening steel markets abroad, the Brussels Steel Export Convention—price guide for West European steelmakers—has decided to slice export prices again to countries outside the European Coal & Steel Community.

New minimum prices—effective immediately—reflect prunings of $3 for bar steel to $90 a ton, $2 for structural steel to $92 a ton, and $4 for wire rod to $92 per ton. One exception is hot-rolled steel: It advanced slightly to $110.50 for overseas exports and was raised to $109 for export to European countries not belonging to the Coal & Steel Community.

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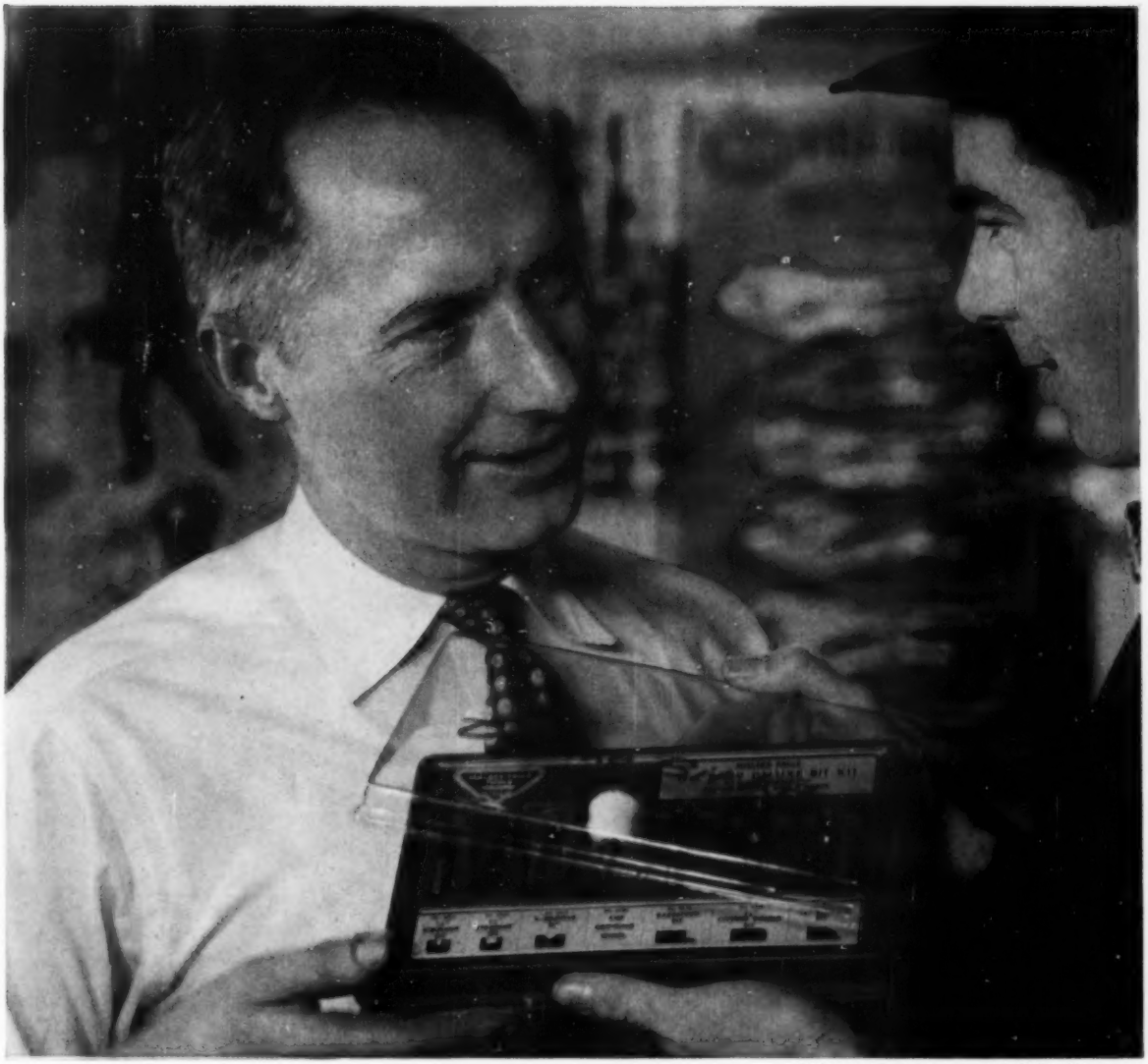
Frondizi Tackles Economic Problems In Argentina, Takes Over Oil Monopoly

Arturo Frondizi, Argentina's new president, is impressing U. S. and foreign businessmen. In last week's inauguration—attended by Vice-Pres. Nixon—he laid Argentina's woeful economic situation on the line: chronic inflation, huge trade deficits, almost empty foreign-exchange reserves. In addition, he warned military brass that he's the supreme boss. While promising general wage increases, he refused to make them retroactive.

Frondizi followed up his speech with action. **He took on the job of running YPF, the state oil monopoly. Many observers see this as a step toward inviting U. S. and foreign participation—though not outright concessions—in Argentine oil development.** Frondizi also clamped down on non-essential imports.

What pleased businessmen most, was Frondizi's decision to end the sporadic practice of confiscating private companies and creating new state enterprises.

Already, Frondizi is toeing the fine line between nationalism and invitations for outside financial help. But with his performance so far, he may enable Argentina to get sizable assistance from the Export-Import Bank, which is sending a mission to Buenos Aires soon.



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Take the Bit Kit unit the Millers Falls tool salesman is showing Frank Graessle, White Plains (N.Y.) hardware dealer. Actually, this type of package proved so successful last year that Millers Falls selected it to help put across this year's new line of bits.

Because the cover, 20 mil Kodapak Sheet, is so transparent—*the merchandise looks its best.*

Because Kodapak Sheet retains its brilliance, does not rub dull—customers look and buy without touching!

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new '58 Dodge Power Giants pay off *big*... are the 4-way leaders of the low-priced 3

Two-fisted, but tight-fisted, too! That's the financial report on today's all-new Dodge *Power Giants*. Operators who keep a close tab on expenses find low-cost Dodge trucks are sound investments because they're first in all four important ways:

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DODGE *PowerGiants*

INTERNATIONAL OUTLOOK

BUSINESS WEEK

MAY 10, 1958



A summit conference seems unlikely now—unless Moscow makes important political concessions. That's the gist of the NATO meeting in Copenhagen.

Soviet threats and Premier Khrushchev's erratic moves have rallied the West. Differences among the Western powers—over suspending nuclear tests and military "disengagement" in central Europe—are being brushed aside. Now the NATO powers, without exception, see no safe alternative to military strength and Allied unity.

The Copenhagen meetings added up to a vote of confidence for Secy. of State Dulles' negotiations for a summit conference. Dulles has insisted on clear proof—before any meeting—that Khrushchev is prepared to solve issues now splitting the East and West. Dulles has refused to let Khrushchev dictate the ground rules for the summit.

The coming weeks may be decisive. They will show whether the Kremlin recognizes that it has overplayed its hand. Some observers believe that's the case.

One example is Moscow's two-faced response to Pres. Eisenhower's Arctic inspection proposal. It vetoed the plan in the United Nations. Then, Khrushchev put the idea on his list of topics for a summit meeting. That could mean a concession to the U. S. or—equally—it could be just another maneuver in discussing procedural problems for the summit.

Meanwhile, the West seems willing to meet the Russians half way. For instance, it might accept other countries at the summit, besides the Big Four. But there's still firmness on one principle: No top-level conference without some promise of concrete results for peace.

—•—

At midweek, the odds favored Rene Pleven's investiture as new premier of France. His No. 1 problem will be the Algerian war—how to end it fast.

Though a compromiser, Pleven may take bolder steps than his predecessors. He might negotiate directly with the Algerians. He might also work toward incorporating a North African Federation into the French Union.

Last week's conference of North African nationalist parties in Tangiers is forcing France's hand. The parties, representing Tunisia, Morocco, and Algeria, recommended formation of an Algerian government-in-exile.

Their decision, if implemented, might spread the Algerian war to neighboring countries. If Tunisia and Morocco recognized an Algerian government, that might bring a breakoff in relations with France. And that, in turn, could lead to clashes between Arab troops and French soldiers stationed in Tunisia and Morocco.

In any case, the Tangiers meeting showed that even pro-Western Arabs in North Africa are:

- Increasingly impatient with U. S. policies in dealing with the French-Algerian crisis.
- Hurting from the mounting financial burdens that the drawn-out war is placing on their countries.

Indonesia's central government has defeated the Sumatran rebels. That means an end to Rebel Premier Sjafruddin's attempt to force Pres. Soekarno to abandon his pro-Communist policies. It also leaves the rebels' demand for a better economic deal hanging in the air.

But the government crisis in Djakarta is continuing. Now virtually bankrupt, the federal government needs sizable financial aid. It won't get much help—if any—from Washington. And Moscow, which has already committed around $100-million in military aid, won't cough up more money unless Soekarno:

- Agrees to exclude Mohammed Hatta, pro-Western Moslem leader, from any future Indonesian government.
- Guarantees to prevent formation of a military dictatorship, favored by Col. Nasution, Soekarno's powerful chief of staff.

A military regime—with elections suspended—would pull the rug from under the Communists' growing electoral strength. The Reds count on emerging from next year's elections as Indonesia's strongest political force.

—•—

In Britain, the London bus strike is testing out the Macmillan government's stand on wage increases. The government offered the busmen a wage boost. But it refused the union's demand to extend the increase to busmen outside London.

The unions don't seem in the mood for a full-scale showdown this year. But the railway workers are ready to make trouble. And the large engineering and shipyard unions are poised to push their claims for wage increases. **If the government firmly resists wage demands, it could stir up a rash of large-scale strikes.**

—•—

London may ask the World Bank for massive financial assistance for Britain's nuclear power station program. The total amount involved might run to $1-billion over a 10-year period. The idea is a joint financing operation—part from the Bank, the rest from private U. S. sources.

The loan, in effect, would increase Britain's dollar reserves. It would be a way of helping to fund Britain's large short-term debt to Washington of nearly $1.3-billion. London raised this amount from the International Monetary Fund and the Export-Import Bank last fall during the sterling crisis.

—•—

In Washington, the outlook for the foreign aid bill is brightening. The Administration now hopes to hold cuts well below the $1-billion it expected to lose.

Underdeveloped countries, hit by the recession, are demanding stepped-up U. S. aid. This week, Lebanon called for a threefold increase in aid. During Vice-Pres. Nixon's visit, Bolivia warned that Washington would have to double aid—or see the country go Communist or Fascist.

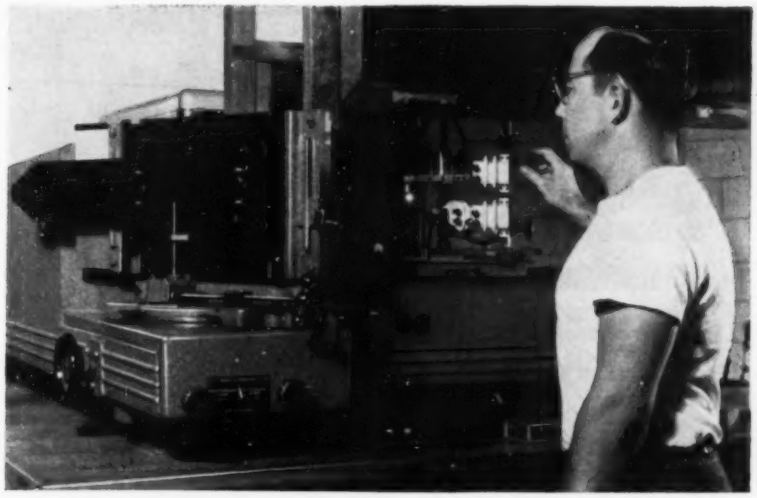
U. S. officials are worried—even though these demands for aid, in some cases, are sheerly political. A further drain on reserves of countries dependent on raw materials sales might push them toward retaliating against U. S. exports. It could drive them toward Moscow.

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Arsenic in petroleum can be plain murder



Arsenic in catalytic reformer feed stock, even in minute quantities, is deadly. Unless detected and removed it can literally "poison" platinum-containing catalysts, making them ineffective and necessitating costly replacement. UOP laboratories made the first identification of arsenic on poisoned reforming catalysts and evolved a practical method for removing this poison from feed stocks. UOP laboratory service is broad, comprehensive, expert, providing vital information that in most cases would be impractical or economically impossible for the individual refiner to develop. It covers such specifics as the evaluation of crudes, problems of treating products for maximum stability, maintenance of product quality and performance of gas concentration equipment. UOP laboratories answer all the requirements of a thorough and complete laboratory service. Today, refiners everywhere in the free world are users of this laboratory service. It is available to any refiner, regardless of his scope of operation.



This machine is a spectrograph and it is just one of the many modern laboratory tools with which UOP laboratories serve the refining industry. This spectrograph is the very instrument used in the initial detection of arsenic in feed stocks. With the impurity once identified, proper methods for removing it were quickly developed. Through modern services such as this, practical, economical solutions are available to refiners everywhere.

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Throughout the world, in thousands of dependable installations, Carrier air conditioning serves more people and more purposes than any other make. Good reason to call the Carrier dealer or office listed in your Classified Telephone Directory. Carrier Corporation, Syracuse, New York.

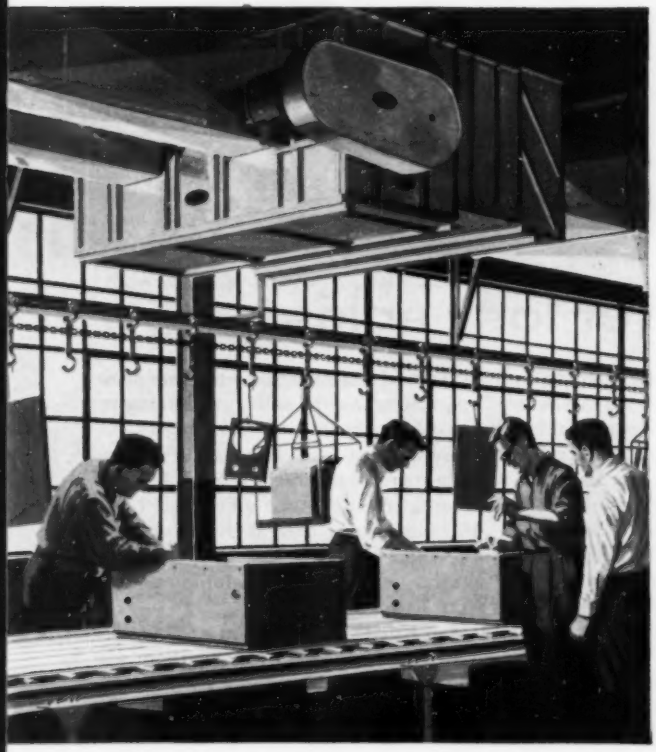
Ask your Carrier representative for copies of the free booklets, "Which Is the Best Way to Air Condition Your Plant?" and "Which Is the Best Way to Air Condition Your Business?" Or write to Carrier Corporation.



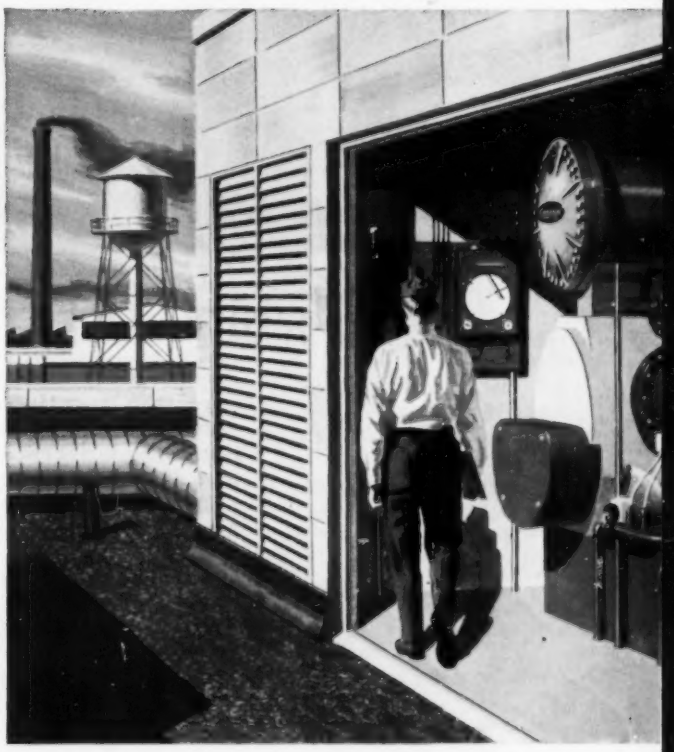
Do you have a small shop? Choose Carrier Weathermakers*. They are self-contained air conditioners which may be used with or without ducts. Quick and easy installation won't interrupt work.



Do you have a production line? Install a Carrier Commercial Weathermaker and run a duct from it along the full length of the line. You'll get cooling only where you need it, right where the work is done.

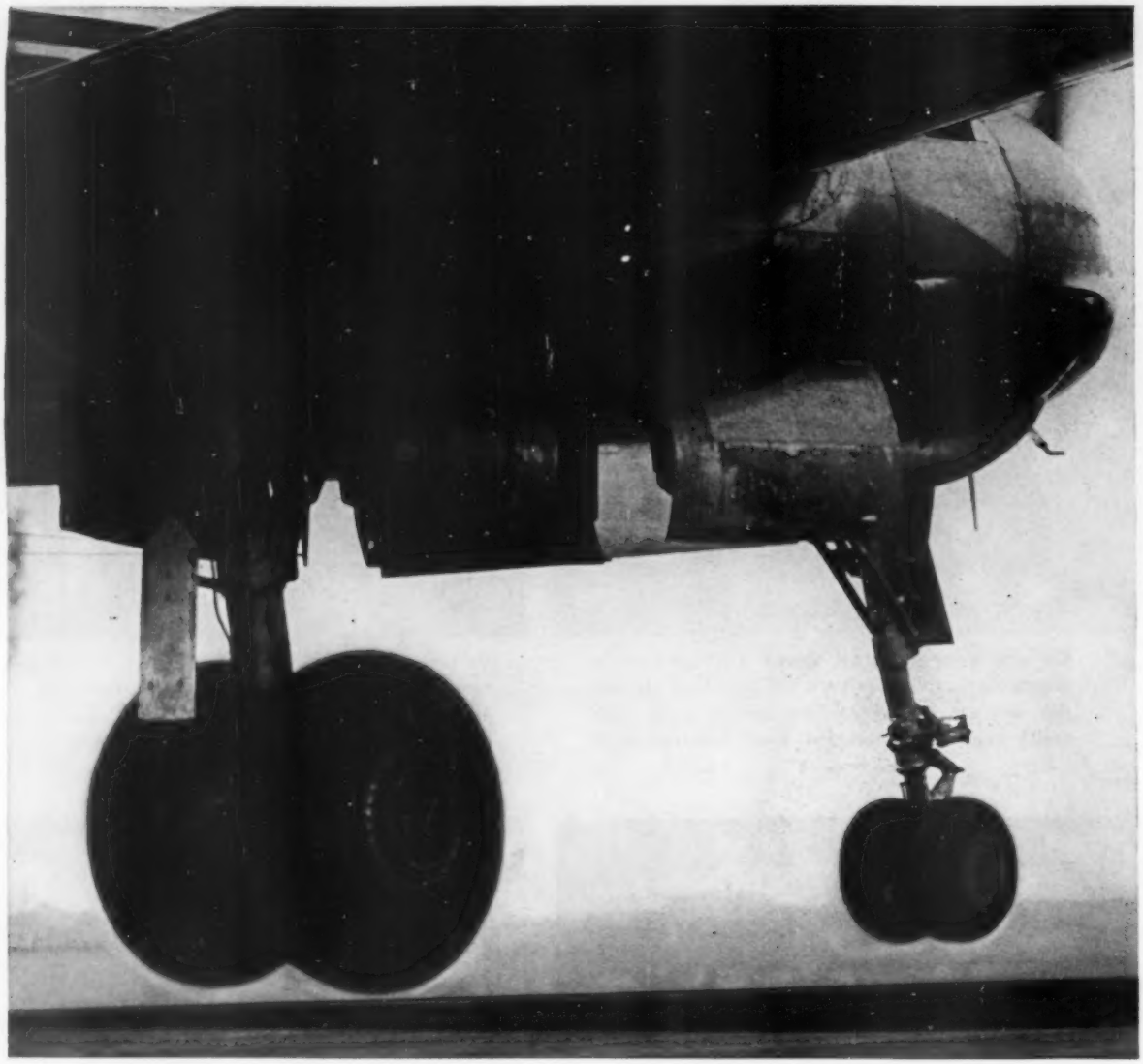


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LABOR

Congress Talks T-H Amendments

● Once again, Congress is hashing out possible revisions in the Taft-Hartley Act, now more than 10 years old.

● This time, the result may be some restraints on the unions—but probably not in this session.

● Aware of the strong feelings against them, labor leaders are willing to compromise on federal regulations.

Just over a decade ago, Congress passed the Taft-Hartley Act despite organized resistance by labor leaders, who fought the measure as a "slave labor law" without compromises or counterproposals of their own.

This week, a Senate labor subcommittee headed by Massachusetts Democrat John F. Kennedy opened hearings that may result in the first meaningful amendments to the 1947 labor-management law. At least, the Senate seems determined to vote some new clamps on union behavior before the session is over. Whether a bill gets through Congress—and House action this year is unlikely—union officials foresee such legislation as an eventual threat. They are primed for the fight, with a new kind of battle plan.

• **Friendly Foes**—Burned by their original Taft-Hartley experiences, AFL-CIO Pres. George Meany and other federation leaders are appearing before the Kennedy subcommittee in an amenable mood. They don't like most of the new amendments now being proposed, but they aren't going to boycott discussions; they'll talk compromise in hopes that their appearances in the witness chair will calm the stirred-up senators.

Meany says organized labor can be persuaded this time to accept some new federal rules. He puts it this way: "We'll go along with any legislation that will be helpful to unions in weeding out corruption. But we will not go along with legislation that tries to punish the labor movement for the sins of a few."

This means that the unions will back a health and welfare fund disclosure bill, federal criminal penalties for embezzlement of union funds, and opening to the public union financial reports now made to the Secretary of Labor.

• **What Congress Wants**—But the legislators have other revisions in the federal labor law in mind. They are aiming at the kind of abuses disclosed by the Senate rackets investigating committee; they want tight curbs on union finances and government rules for internal union operation—election and recall of union officials by secret ballot, a pre-strike ballot by union members, and so on.

Labor leaders are firmly opposed to almost all such proposals. They don't want the government telling them how to run their unions and, except for some additional reporting on financing, they don't like the idea of extensive revelations of their affairs.

How to avoid such a bill in the face of year-long disclosures of union racketeering by the rackets committee headed by Sen. John L. McClellan (D-Ark.) is another matter. The bill probably won't come this session, but it won't be forgotten either when Congress takes up next year.

Some of the testimony that indicates further federal checks on unions are needed comes from the lead-off witnesses before the Kennedy subcommittee. Two senators—McClellan and William Knowland (R-Calif.)—came up with similar bills to control union affairs. It was a bipartisan approach that showed they mean business, although it doesn't have unanimous bipartisan backing, of course.

• **Bent on a Bill**—Kennedy, who isn't likely to support most of the proposals offered by either witness, did pledge: "There will be a bill this session. This is not an opinion but a fact."

The subcommittee is committed to the almost-impossible task of writing a new Taft-Hartley bill by June 10, starting after a scheduled two more weeks of hearings. Almost everybody involved is aware that the dozens of amendments being offered are not only complicated but also politically hot as well. Keeping to the schedule is likely to mean a watered-down bill, but the Kennedy subcommittee, with a liberal majority of Democrats, is not expected to adopt the McClellan-Knowland versions or anything close to those.

When the bill reaches the whole Senate, amendments rejected by the subcommittee can be resurrected, at least for debate, and some of them will probably be approved.

• **Passage Unlikely**—What happens then? Nothing, probably. The House—and particularly the House Labor Committee, which would first consider a new Taft-Hartley version—are showing no disposition to get involved in the subject this session. This attitude could change, but late Senate action would make it almost impossible for the House to act, even if it wanted to.

But it isn't going to deter the Senate, and the Kennedy subcommittee is going right ahead on schedule. To get through in three weeks, the witnesses are being limited. An attempt was even made during the first day's session, with Knowland in the witness chair, to hold discussion down to five minutes each on the various proposals.

• **Knowland's "Moderation"**—The new trend of the hearings was set by Knowland who, while receiving the proper Senatorial courtesies from the committee members, found his proposals anything but popular with the Democratic members of the subcommittee.

Knowland described his measures as "moderate." But they would go farther in federal controls over unions than those offered by the Eisenhower Administration and McClellan. In the hearings, Sen. Pat McNamara (D-Mich.) described the secret ballot plans of Knowland as "dictatorial," and Sen. Wayne Morse, (D-Ore.) said other proposals would lead to "disruption" of unions and labor-management affairs.

Both of the senators indicated they wouldn't back Knowland's bill, but this came as no surprise. Probably most of it won't survive in the Senate itself, despite Knowland's warning that the voters are insisting on some sort of labor reforms. If a measure doesn't pass this session, Knowland won't be around to vote again; he retires to run for governor of California.

• **"Bill of Rights"**—In brief, here's what Knowland is asking in his "Bill of Rights" for labor:

- Secret ballot election of officers at least every four years.
- Provision for recall of union officers through a vote conducted by the National Labor Relations Board if 15% of the union's members ask for such drastic action.
- A pre-strike vote by union mem-

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• A ban on jurisdictional agreements in which unions divide up geographical territory for their operations.

• A one-year limit on trusteeships.

• The right of individual union members to petition the National Labor Relations Board when they feel the union has deprived them of their rights.

• **McClellan's Bill**—McClellan, on the other hand, proposes:

• Full accounting and disclosure of finances of the union and its officers to the Secretary of Labor, with criminal penalties for violations.

• A ban on organizational picketing unless two-thirds of the employees agree.

• Election of union officers at least every three years by secret ballot, with salaries and expense accounts voted at the union convention.

• All union affairs must be disclosed to the membership.

• **White House Plans**—The Administration's proposals, which are more moderate than either the McClellan or Knowland plans, nevertheless include some of the same ideas. Besides the secret ballot and organizational picketing proposals, the White House also favors, as do the others, curbs on deals between union and management officials and with middlemen.

Labor officials don't like most of these plans, but they are going to be cautious in their resistance. They don't want the opposition to get any madder than they already are.

This strategy has been growing for the past several months. At first, the idea was to fight any T-H amendments, just the way labor fought the original law. But this changed as it became more and more obvious that the Senate really means business.

While no new measure is expected to go through this session, Meany, Walter Reuther, and the Railway Clerks' George Harrison—main political strategists for labor—aren't taking the matter lightly. They feel the McClellan committee revelations have hurt to the point where something may be done to check labor—if not this session, perhaps the next.

High Court Extends "Unfair" Tag

Says employer can't insist on clause for pre-strike vote on last offer, or on contract with local.

The U.S. Supreme Court ruled this week that it is an unfair labor practice for an employer to insist on a clause that would bar a strike until all employees—union and nonunion—have voted on the company's last offer.

In the same case, the court unanimously agreed an employer may not insist that its contract be with a local union rather than with the international that was certified as bargaining agent by the National Labor Relations Board.

• **UAW Case**—The case grew out of a dispute between the United Auto Workers and the Wooster (Ohio) Div. of Borg-Warner Corp. in 1952. Borg-Warner offered to sign a contract, but only if it contained the pre-strike clause requiring a vote on the company's last offer, and also one substituting the UAW local for the international, which had been certified by NLRB. The local first refused and struck, then agreed to the company's terms and filed an unfair labor practice charge.

Justice Harold Burton upheld NLRB's ruling that insistence by Borg-Warner on either of the disputed clauses amounted to a refusal to bargain. A lower court had supported the board only on the clause substituting the local; other courts have split on similar cases.

• **Reasoning**—Burton ruled that the fact that an employer may lawfully propose either clause does not mean an employer may insist on them "as a condition to any agreement." Neither clause comes within the law's definition of "wages, hours, and other terms and conditions of employment" on which bargaining is mandatory, he said.

Specifically, Burton held the pre-strike clause—unlike a "no-strike" clause—deals "only with relations beween the employees and their unions." Such a clause "substantially modifies" the collective bargaining system, weakens the independence of unions, and enables the employer to "deal with its employees rather than with their statutory representatives," according to the Supreme Court justice.

• **Agreement and Dissent**—All members of the court agreed it was unfair and illegal for Borg-Warner to insist that the certified international union could not be a party to the contract. But Justices Harlan, Frankfurter, Clark, and Whittaker dissented on the pre-strike clause. Harlan said he was "unable to grasp a concept of bargaining which enables one to 'propose' a particular point, but not to 'insist' on it as a condition to agreement." To Harlan, this "inherently vague and fluid standard" will "inhibit" bargaining, and is a "watered-down notion of bargaining . . . foreign to the labor field." **END**

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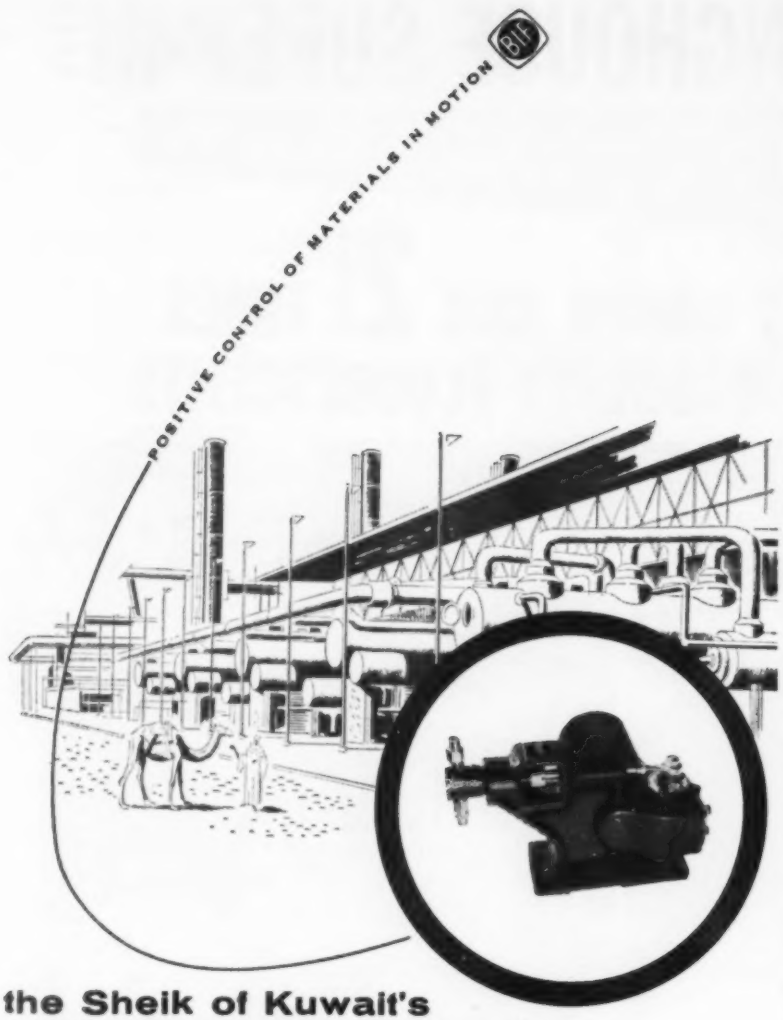


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GAW Demands...

. . . are now mostly just talk, except with Packinghouse Workers in bargaining for sugar workers.

Some industrial unions are still talking about the guaranteed annual wage as a contract demand—but for almost all of them it's just talk, no action. The United Packinghouse Workers is an exception. It is pressing, with success, for 2,000-hour pay guarantees at bargaining tables in the sugar industry.

• **Two New Pacts**—Just recently, UPW negotiated its first guaranteed-wage contract in a southern sugar plant, with American Sugar Refining Co. for 1,100 employed in New Orleans. It quickly followed up with a second, with National Sugar Refining Co., covering 800 employed in Reserve, La.

Both are "pattern" contracts. They provide workers with a guarantee of 2,000 hours of work or pay at regular straight-time rates during the contract year. All workers with at least a year of seniority are covered.

The contracts also guarantee eight hours of work a day, and provide that only the eight hours can be counted against the 2,000-hour GAW. Overtime hours do not count, except for the first eight hours worked on a Saturday or Sunday, or on a holiday when overtime rates are paid.

The union is now negotiating on a similar GAW demand to cover two smaller plants.

• **Earlier Pacts**—UPW negotiated its first GAW contract in the sugar industry in 1951, when Revere Sugar Refining Co. agreed to guarantee 1,900 hours of work or pay at Charlestown, Mass. The pay assurance was later extended to 2,000 hours in a year.

In 1952, the union and National Sugar agreed on a 2,000-hour guarantee at a refinery at Long Island City, N. Y., and not long afterward UPW won a similar clause in a contract with American Sugar for a Baltimore plant.

The union has other wage-guarantee contracts in meatpacking, notably with Geo. A. Hormel & Co.

• **Area Differentials**—Along with wage guarantees, UPW won a further narrowing of area pay differentials in the southern pacts. Five years ago, the hourly wage in Louisiana was 41¢ below that in northern refineries. The new agreements reduce this to 28¢ in the American Sugar plant in New Orleans, 33¢ in National Sugar's Reserve (La.) operation. National Sugar will raise pay again Jan. 1, 1959, when the Reserve wage gap will also be reduced to 28¢. **END**





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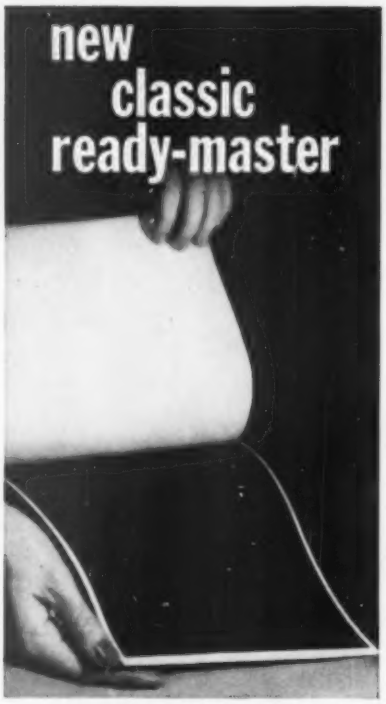
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In Labor

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ICC Denies Common Carriers the Right To Refuse Service to Picketed Shippers

The Interstate Commerce Commission this week showed its growing impatience with common carriers that try to deny service to shippers who are blacklisted by labor. **ICC closed a legal loophole that allowed the carriers to skip pickups and deliveries where labor disturbances are going on.**

The commission rocked truckers and the International Brotherhood of Teamsters with a "hot cargo" decision last December. It threatened to take away common carrier licenses of truckers that turn down shipments blacklisted as "hot" by the Teamsters.

Now the ICC has followed through. Most carriers have escape provisions in their tariff postings that allow them to waive pickup or delivery responsibilities where there are "strikes, riots, picketing, or labor disturbances" of any kind. **ICC this week declared that clauses of this sort are invalid; responsibilities can't be waived.**

• • •

Fatal Fire in New York Garment Shops Brings Plan of Wardens Among Workers

A fire this spring in a New York garment district loft cost the lives of 24 persons—most of them members of the International Ladies' Garment Workers' Union. As a result, **ILGWU this week broadened its labor-management safety program by designating fire wardens for each of the 6,000 garment factories that are crowded into New York's lofts.**

The wardens—one or more for each shop—will work with the city fire department. They will be briefed on the basic rules against fire hazards and on regulations requiring safety doors, open aisles, escape exits, and other safeguards for workers.

Hazards will be reported to employers and—if they aren't remedied—to the fire department and the union for further attention.

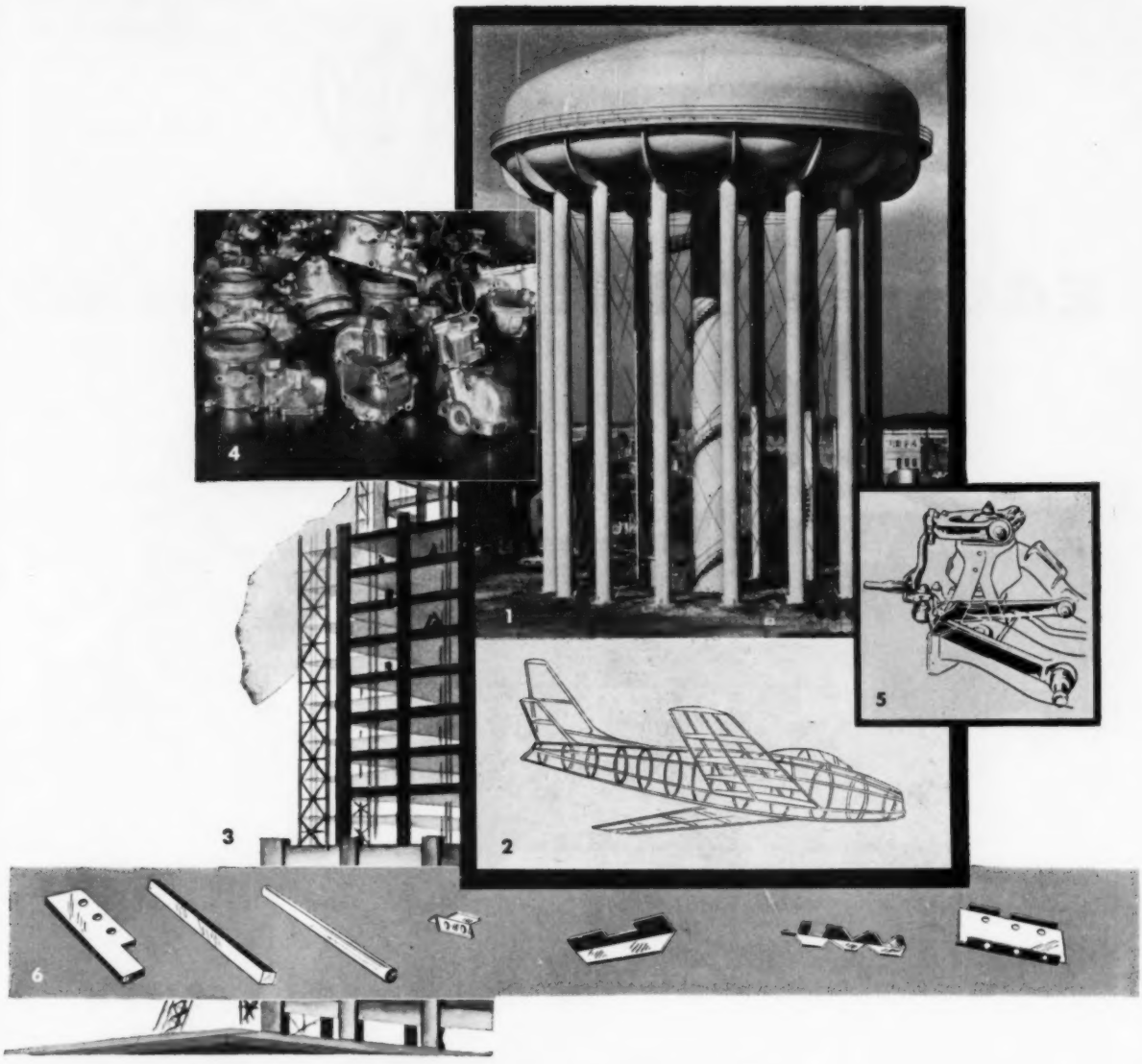
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UAW, Auto Companies Lock Horns Over Increase in Pension Benefits

This week, just before the United Auto Workers and the auto companies went into the final stage of their negotiations, an unexpected area of controversy came to light—pensions.

In assessing the auto workers' over-all demands, General Motors tagged them with a price of 73¢ an hour and Ford "in excess of 71¢." **One of the biggest items in the GM estimate was the cost of higher pension benefits, an estimated 13¢.**

UAW struck back at GM, claiming that pension benefit increases would cost only 4¢ an hour. UAW wants cost-of-living increases in pensions, to offset the squeeze put on fixed incomes of retirees by rising prices. According to UAW, GM pension funds are invested in securities whose value increases in an inflationary period, so GM thus makes, mechanically at least, a profit from the pension funds, and therefore additional cost-of-living increases to pensioners would not cost the corporation additional money.



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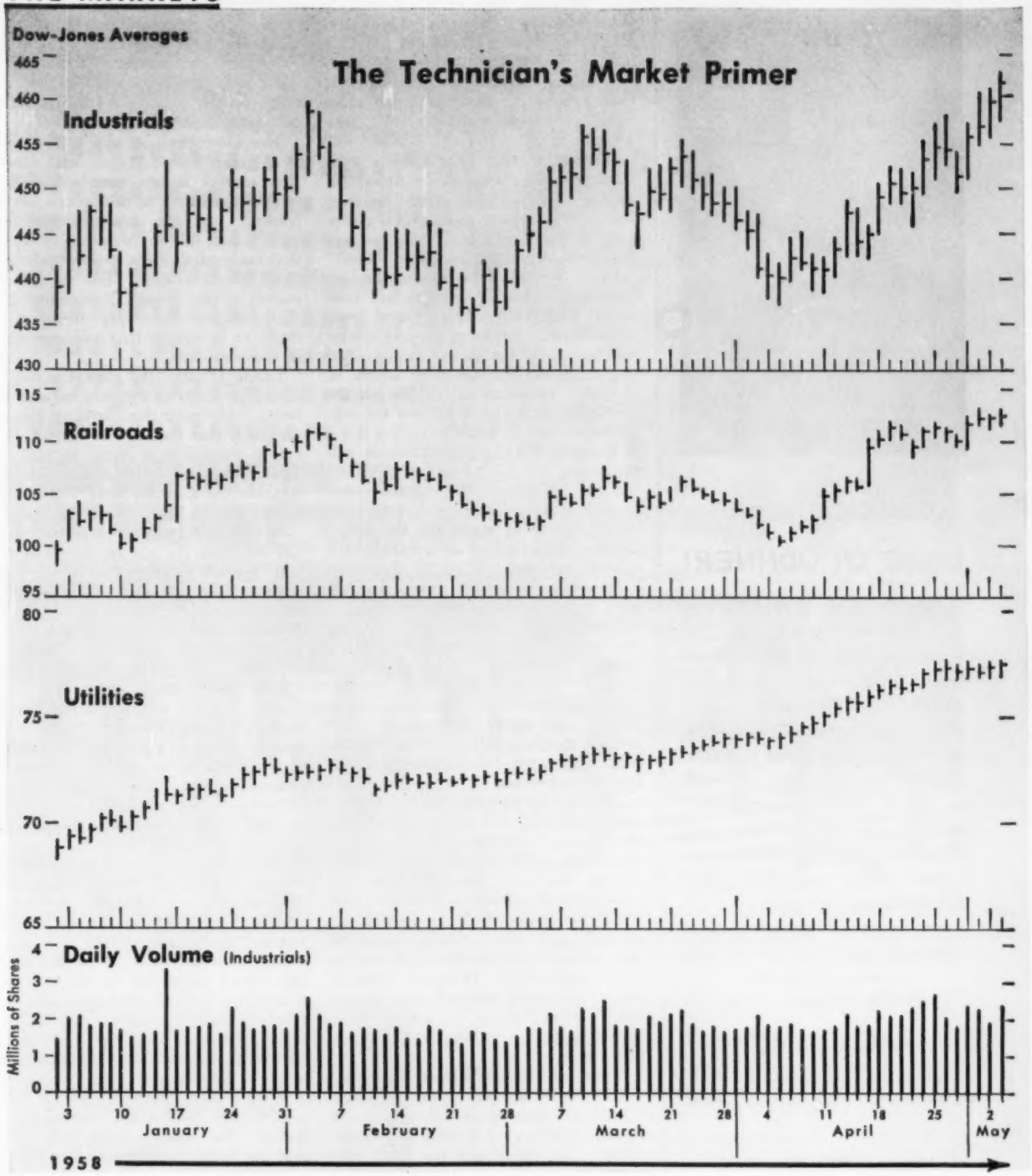
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What Chart Readers See Ahead

The stock averages hit highs for the year this week—and the impact sent investors scurrying for signals to confirm or deny whether this means a new bull market is under way.

Investors are hopefully scanning the primary gauges you see in the charts above—the daily record of the averages and the trading volume. And they are looking eagerly to that small but dedicated cult—the stock market chartists—to see if their more obstruse readings give any indication that the market is headed higher.

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cult say no. Whether they are orthodox Dow theorists, like Perry Greiner, of Rhea, Greiner & Co., or odd-lot devotees, like Sander Landfield, of Carlisle & Jacquelin, market technicians see nothing in their mystical numbers that suggests to them anything more than a temporary rally in stock prices.

Greiner, in true Dow fashion, calls the new highs "a secondary move," in no way to be confused with "the market's primary move, which still is downward." Landfield thinks part of the rise stems from the increased "short" position of odd-lot buyers, but he says his studies show the averages will tend down. John Magee, of Technical Analysis of Stock Trends, an advisory service which applies Dow theory to individual stocks, thinks the favorable action of individual issues has carried the market to its new highs. But he says the major move still is down.

• **Records**—These prognostications will not make Wall Street jump to execute buy and sell orders. The chartists speak in such esoteric language that they often appear to be straddling the fence. Besides, their record of accuracy still is hotly debated.

But over the past 10 years, chartists have done extremely well by studying the movements of trend lines, resistance and support areas, and the sundry other symbols they follow—"flags" and "pennants," "rounded shoulders," "coils" and "cradles," and "dropping necklines." And many professionals have learned to mix a little chart reading in with their own fundamental data to spot market trends.

• **Theme and Variations**—Each technician, of course, uses his own methods. But all owe allegiance to Charles H. Dow, creator of the Dow theory, who set up the basic principle that the movement of an average price of a representative group of stocks, such as industrials and rails, tends to persist in one direction—once the direction is firmly established. However, Dow allowed for minor reversals—or "corrections." And Greiner, for one, says the current market is making such a minor move now.

Nowadays, the unadorned Dow theory is usually shunted aside. It's considered too general; it either gives its signal too late, or it is often downright wrong. But the theory has been subjected to a great many refinements, and chart reading is regarded as an esoteric but useful tool by most Wall Street professionals.

• **Three Views**—Regardless of the variations used, however, most technicians today feel the market is overplaying its hand. "It would seem premature," says Greiner, "to think that stocks have recorded their lows." On the basis of past experience, he says, recent "technical signs near the established lows show little resemblance to the low-volume type of action found near the endings of most previous bear markets." He adds that it would be foolhardy to dismiss the parallel between the present rally and the prolonged false rise from November, 1929, to April, 1930.

Non-Dow theorists don't take such an adamant view. Magee, who claims that market action now makes him stand "just a little to the bullish side of center," says the present highs are merely part of an intermediate rally, that no reversal of the major downward trend is yet evident. But he stoutly maintains that though "you cannot buy the averages, there are many good stocks to be bought that will appreciate in the near-term."

Landfield says "the market is not in a position to go on a protracted upward swing." He bases this partly on the assumption that the ratio of odd-lot buying to round-lots is about to run up. That's a sign of technical weakness, he says, because it means there is too much public buying of a speculative nature.

But Landfield agrees that some groups —he mentions the oils, for one—will sustain themselves better than others even if the market breaks down, as he expects.

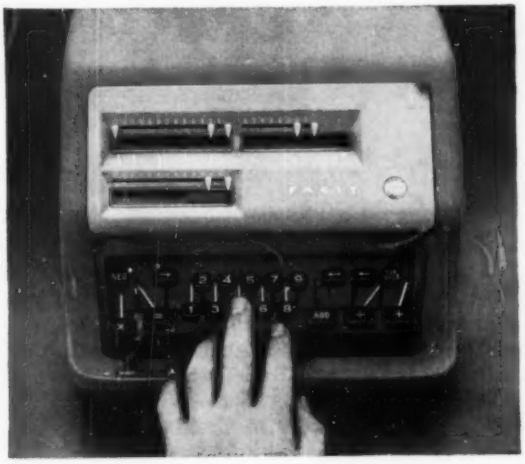
• **Rosier**—One of the more optimistic technicians is Edmund W. Tabell, of Walston & Co. (BW—Sep.15'56,p96). Tabell, unlike the majority of chart readers, doesn't rely solely on charts. Rather, he uses them as a nucleus for broader studies, relies on the whole combination as a market forecaster. Point-and-figure analysis—the trade name for Tabell's form—focuses on the past action of stock prices as a gauge of future moves. And from his array of some 1,500 charts, including studies on volume, confidence, railroad bonds, and "central value," Tabell concludes there's little chance that the market will test its October low of 419.

But while he feels the market averages aren't going too far in any one direction ("perhaps 480 to 420"), he also believes that many stocks will show bullish tendencies. He particularly points to the utilities, food chains, tobaccos, finance, and drugs.

With Tabell, the main concern now is trying to time the true upward penetration. His studies show that there now has been a longer period in which advancing issues have predominated over declining ones than at any time since late 1955—an indication of an upcoming advance.

• **Warning**—But Tabell, along with the overwhelming majority of technicians, doesn't think he's infallible. In fact, all warn the amateur investor to be chary of charts. "It's not cut-and-dried," says odd-lot reader Landfield. **END**





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The Bond Market Begins Edging Upward Again After Gyrating Ever Since Last November

Bond prices this week showed signs of strengthening after a short but sharp tumble.

The rise in prices was modest but widespread. Ever since the Federal Reserve started easing credit last November, the bond market has been fluctuating widely. At first, prices rose abruptly; then they backed down. There was another steep climb last month, and this, too, gave way to a decline. But the drops were not so severe as the increases—so that, by and large, bond prices have moved higher.

Now there are indications that the market will climb again, **but not in the rampaging manner that characterized its previous hikes. Bond dealers think a more orderly rise will prevent the sharp technical reactions that pushed prices down.** Of course, bond men always favor stability—something that has been completely lacking this year.

There are two main influences on today's bond market, and, at the moment, the two are slightly in conflict:

• The Federal Reserve is pursuing a policy of active ease, in order to lower interest costs and encourage borrowing.

• But the U. S. Treasury is competing with other borrowers—state and local governments, industrial corporations, utilities—for funds available in the market, and this tends to hold interest rates up.

Privately, Fed officials have made clear that credit policy will continue easy, and further action, including new reductions in reserve requirements, is considered likely. But the bond market is worried for fear the Treasury will attempt to market some long-term issue next month—which would work against the rise in bond prices and the lowering of yields. The Treasury has not yet decided what course to take, but it will probably not make any strong attempt to attract new long-term funds.

If the Treasury does not compete with other borrowers, then long-term rates should drop—and prices rise. William Hummer of Chicago's Wayne Hummer & Co. points out that "there is now the widest gap between short-term and long-term yields since World War II." With the Fed making funds available, the present short-term ease should work its way through to the long-term sector. Bond expert Theodore Goldsmith, for instance, looks for a return to the pattern of 1954, when long-term Treasury bonds sold below 2¾%. They are now selling just under 3¼%.

• • •

Fed Wants to Clarify and Stiffen Laws Regulating Bank Holding Companies

Recommendations for 25 changes in the Bank Holding Company Act were forwarded to Congress this week by the Board of Governors of the Federal Reserve System, which administers the law. Many of the recommendations are technical, designed to clear up ambiguous language of the 1956 law. Some—if adopted by Congress—would tighten enforcement of the act. Sample: The Federal Reserve wants to end a provision that allows an individual bank in a holding company system to absorb another bank without prior approval of the board.



The cans that came to dinner

Swish! And a tinned-steel can is open to solve any one of the housewife's many different meal problems. In fact, entire meals—from rare delicacies to everyday staples—can be dished up in a jiffy from the amazing variety of readily available canned foods.

Yes, today's canned foods solve countless meal problems. Thanks in a large part to Wheeling Steel's *Ductillite*. You see "tin cans" are actually 99% steel, with a coating of tin. These metals are combined because steel is the strongest packaging material known . . . and tin further safeguards your family's health by protecting the fresh-packed quality of the can's contents.

When it was introduced three decades ago, Wheeling's *Ductillite* revolutionized the canning industry – making possible tough, more reliable cans that are so inexpensive they can be discarded once they're used. And Wheeling's *Ductillite* is even better today because of our recently completed $35 million improvement program.

You can always rely on steel . . . Wheeling steel! Wheeling Steel Corporation, Wheeling, West Virginia. **IT'S WHEELING STEEL**

WHEELING STEEL



October 15, 1924—*First transatlantic crossing by lighter-than-air cargo carrier.* The German dirigible ZR-3, "a commercial vessel, capable of transporting a *liberal quantity of cargo* across the Atlantic or farther," flew from Friedrichshafen to Lakehurst.

What can the ZR-3 teach the chairman of the board?

Overseas air cargo is more than a means of speeding goods to market.

It is a way to build business, increase a company's potential at home and abroad.

No executive can afford to ignore these important *facts:*

Today it is possible to ship by air for *less* than by sea. Air cargo saves on crating, has no "hidden" charges.

Swift air delivery opens new markets, spurs repeat orders, allows you to reduce inventory and eliminate overseas warehousing.

Air cargo shortens the gap between manufacture and delivery, smooths out production flow, speeds up payments.

And only Pan American offers the Pan Am Profit Lift—*the most comprehensive service of ANY overseas cargo carrier.*

For further information, contact your cargo agent, forwarder, Pan Am or local airline.

ONLY THE **PAN AM PROFIT LIFT** GIVES BOTH SHIPPER AND CONSIGNEE ALL FIVE:

Fastest Delivery to all the world. No other airline can match Pan Am's number of *direct* flights to and from all 6 continents of the world.

Fastest Reservations. Space can be confirmed electronically in 4 seconds. Reserved or unreserved, *all* Clipper* Cargo is *expedited.*

Most Experienced air cargo carrier. Pan Am handles 71% more overseas cargo than any other airline. You get *expert* service all the way!

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"Doorstep" Service from anywhere in the U.S. Just contact your cargo agent, forwarder, PAA, or local airline. Pan Am does the rest.

PAN AM
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FASTEST DELIVERY TO ALL THE WORLD



*Trade Mark, Reg. U. S. Pat. Off.

PERSONAL BUSINESS

BUSINESS WEEK
MAY 10, 1958



That lovely old house in the country may turn out to be an impossible devil when it comes to repairing, remodeling, modernizing. Obviously, you can run into disaster if you buy without first sounding out the "guts" of the structure—and for this you'll eventually need a professional.

There are some basic points, though, that you can check yourself, to decide whether an old house is worth an expert's appraisal.

Start by eying the whole structure. First, see if the ridge of the roof is straight. A sag may look picturesque, but it indicates a partial collapse of the roof framing, which means a costly roof rebuilding job, and, maybe, a rebuilding of the upper wall frames if the house is frame. (There are exceptions: the intended "dip" in some Dutch colonials, for example.)

Now eye the corners. They should form straight, vertical lines; any lopsidedness you can spot with the naked eye means a weak foundation, or house frame, or both. The same is true where you see walls that bulge. Cracked walls, of course, are another sign of settling; they don't mean the house is ready to fall, but they do mean some structural weakness that may be extremely expensive to repair.

Next, **check the basement.** If the walls are stones laid up without mortar, they may be risky—and probably bulge inward in places. Here rebuilding costs may be so high as to rule out the house. In any case, you can be sure that these walls will gradually but inevitably lose more strength and lean farther and farther inward.

Even if the basement walls are solid masonry, **check carefully for cracks and bulges.** Serious cracking—or a dirt floor—probably means an "unhealthy" structure, prone to dampness, settling, weakness, maybe termites.

Take a knife and probe the basement timbers, paying special attention to wood parts that contact the walls or flooring. ("Sills" that rest flat on top of the walls are a special danger point.) If the blade goes in easily more than an inch or so, then decay is well advanced.

Replacement of a few wood pieces is safe and not too costly. **But a cellar riddled with many rotted timbers means an expensive job**—and probably a house that should be passed up. (Don't worry too much about minor cracks in the wood, though, if there's no evidence of decay.)

Termites, of course, spell death to many an old house. Look for narrow termite shelter tubes (long tunnels of mud) running up the foundation walls. Tubes are positive evidence, but their absence is no sure indication that the bugs haven't invaded. Knife probing, again, is your best test.

But don't be scared away too quickly if you spot some termite damage. Sometimes safe repair costs little—if the damage is limited.

Here are a few other quick-check points:

• **Insulation.** Peeling on the outside of a frame house may mean a faulty insulation job—with too much moisture retained.

• **Firestopping.** Ask about firestopping in the walls. Without it, a fire in the basement or first floor can sweep up fast—because of the lack of in-wall timbers to break the updraft.

• **Roof covering.** Water stains on the underside of the roof and on the top-floor walls near the ceilings are sure signs of leaks.

• **Chimneys.** Unlined chimneys with thin walls—say, the thickness of a single brick—are dangerous, especially if used with a furnace converted from coal to oil. Warning: Fireclay lining at the top of a chimney is no

proof that it's lined all the way down. Another hazard: a chimney supported at its base by a wooden beam. Only masonry is safe.

• **Fireplaces.** Test by building a fire, and check to be sure there's a damper above. Smoke around the face means some fault in construction.

• **Wiring.** Don't be misled by the number of outlets. A 10- or 12-room house needs about eight or 10 circuits for modern operation; an old house is apt to have only two or four.

• **Plumbing.** One simple test: Open all faucets in the bathroom. A strong flow of clear water probably means good usable piping; a weak or discolored flow means an expensive replacement job. Test the kitchen, too.

Architects' fees vary, but the usual hourly rate is $10 or $15, for inspection and travel-time. If you have no contact, call the local chapter of the American Institute of Architects; many chapters have listings of members who work for specified fees, for appraisal, consultation, etc.

—•—

Having fun trying out your new boat? The boat salesman usually can give you elementary instructions, but two nationwide organizations provide full courses in responsible boat operation:

• **U. S. Power Squadrons.** Local units conduct a free piloting course (10 two-hour sessions). Lectures cover equipment, government regulations, right-of-way rules, seamanship, safety afloat, the mariner's compass, aids to navigation, charts and piloting, manners and customs on shipboard. Advanced courses include: seamanship, advanced piloting, junior navigator, and navigator. Write to National Hdqrs., U. S. Power Squadrons, P. O. Box 510, Englewood, N. J.

• **U. S. Coast Guard Auxiliary.** Training is offered as a community service. Three types of instruction are available: outboard motors and boats, one lesson; basic seamanship and safe boat handling, eight lessons; or condensed version of eight-lesson course in three lessons—which can be taken over a weekend. Inquire of Chief Director of Auxiliary, U. S. Coast Guard, 1300 E St., N.W., Washington 25, D. C., for information on nearest classes.

Especially recommended for amateur boatsmen is Piloting, Seamanship and Small Boat Handling, by Charles F. Chapman (Motor Boating, 572 Madison Ave., New York; $4).

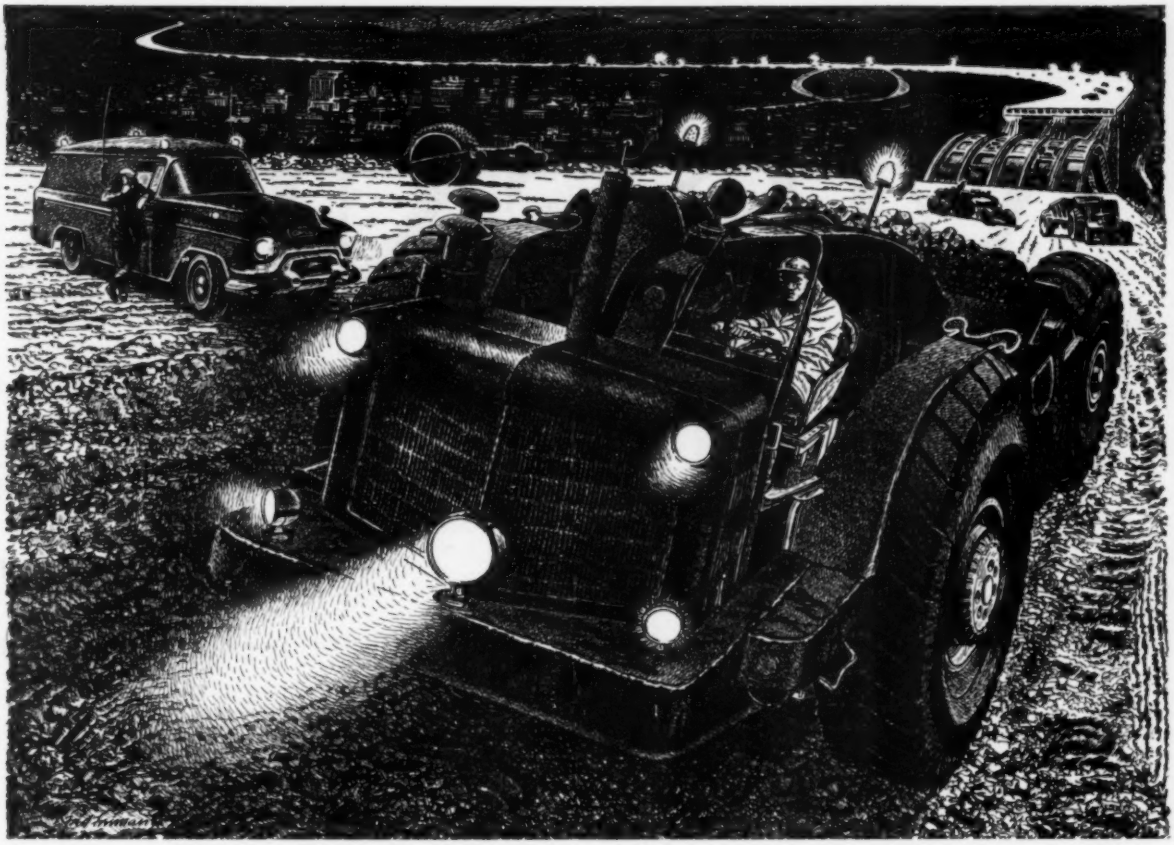
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Potpourri: Do sunglasses sometimes give you the feeling you're missing something? If so, you might ask your optician about American Optical Co.'s new "True-Color" lenses, said to give almost perfect rendition of color . . . Also new on the market is the **ballpoint** Capri Mark III pen, by Paper Mate, which writes on cellophane tape, plastics, glossy photos—and paper ($2.49) . . . Making life easier, too, **is the new 2.5 liter can** of Oilzum for servicing small imported cars; before, a garage attendant would have to open three quart cans for the proper amount, resulting in leftover oil . . . And for outboard motorboat fans, Karr Engineering Corp., of Palo Alto, Calif., is coming out with a **two-way portable radiotelephone;** it's priced at $299 and will be available nationally later this month. Heretofore similar equipment was confined to larger boats.

—•—

Recordings by Van Cliburn, youthful American winner of the first Tchaikovsky International Pianist Competition in Moscow, will be available early in June, according to an announcement by RCA Victor.

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Rough and tough around-the-clock construction jobs call for . . .

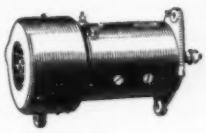
Delco-Remy Heavy-Duty Electrical Equipment

to keep power equipment running dependably

Earthmovers and other heavy-duty construction vehicles often work around the clock—with extra lights, two-way radios and other power equipment all getting full play. Top electrical demand like this calls for tough electrical equipment able to deliver high output regardless of dust, moisture, vibration or temperature extremes.

Delco-Remy's newly designed, totally enclosed shrouded generators, for example, more than meet the demand for high capacity and dependable, dust-proof operation —both essential in off-the-road service. In fact, Delco-Remy forced-air cooling makes it possible for you to get up to *twice* the former electrical output in the same frame size. Thus, when the right new Delco-Remy shrouded generator is teamed with a matching Delco-Remy regulator, the battery stays charged, is protected against over-charging and cycling effects.

New Delco-Remy double-output shrouded generators are available in 6- 12- and 24-volt types. Specify Delco-Remy electrical equipment, including the new longer life Delco batteries, for the new equipment you order, or when you modernize present equipment.



Model 1106921 is typical of a new series of totally enclosed, forced-air cooled d.c. generators, specially designed for earthmovers and similar off-the-road equipment. This 12-volt unit offers maximum output of 40 amperes at operating speeds.

GENERAL MOTORS LEADS THE WAY—STARTING WITH

Delco-Remy

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VIDENE IS HERE

VIDENE is the name, newest of the new.

IT IS an unrivaled super film developed by Goodyear.

IT IS a new polyester that is useful at temperatures ranging from -20° to 200°F.

IT HAS great resistance to chemical stain and grease, excellent electrical properties, is dimensionally stable.

IT HAS phenomenal abrasion resistance. (Example: it has double to eight times that of the best surfacing materials now on the market.)

IT CAN take extremely high "draw"—will go as far as any material to which it is laminated without rupturing or breaking.

Excellent Resistance to Aging

IT RESISTS outdoor aging to a degree never before achieved in any surfacing and laminating film (tests still in process on the Florida seacoast and Arizona deserts, in their second year, show no weathering effects or color fade).

IT CAN be applied to almost any surface—wood, metal, cardboard, glass, paper, foil and most plastics—without requiring an adhesive.

IT CAN be stretch-laminated, used as a "dry adhesive."

And, though in its original state VIDENE is either a transparent or translucent film, it can be reverse-printed to faithfully reproduce any surface, pattern or scene which can be color-photographed—carry any printing technique.

IN SHORT: VIDENE IS A UNIQUE LAMINATING FILM WHICH CAN ADD EXQUISITE BEAUTY AND PHENOMENAL DURABILITY TO A HOST OF PRODUCTS.

What kind of products? Here are a few of the many:

IT WILL, applied to aluminum, build skyscrapers of breath-taking colors, beauty and permanence—

TOPS ANYTHING!

Videne

The Super Film

...A SIXTIETH ANNIVERSARY ACHIEVEMENT OF

GOOD

Here Are Facts About The Sensational Break-Through In Plastics Engineering Achieved by Goodyear—*how it stands to affect and improve a host of products, from skyscrapers to smoked ham!*

yet costs less than other surface treatments, performs better.

IT WILL, applied to plywood, provide hand-rubbed effects on paneling in the widest range of exotic wood grains.

IT WILL, applied to flat sheet metal, be formed into the most beautiful automobile dashboards, refrigerator cabinets and other difficult double-contoured metal surfaces ever to be attractively "finished" before they are shaped.

IT WILL, applied to wall building materials, provide a beautiful, lasting surface that washes like glass—wears like iron. (And you can have gloss, semi-gloss, dull or embossed surfaces—permanently finished to last and last.)

A New Boon for Foods, Too

A special VIDENE packaging film will deliver the finest "freezer ready" fowl—the snuggest, best-protected smoked hams and bacons in the industry.

In packaging, it will make possible heat-seal cartons—seal moisture out or in, make cartons which safeguard the pure, fine taste of milk.

A*nd more:*

On automobile side panels and rails it will withstand salt spray, sand abrasion, weathering, like few surfaces ever known—and none at its price.

It stands to alter the course of the whole hydrographic map field, to produce decals of never-before-matched durability, reflective highway lighting of sensational longevity.

Only Part of the Story

VIDENE is here—a new Goodyear engineering advance of major importance. *Just how important is only partially indicated above.*

Production for 1958 is limited—and will be sold on allocation—until the huge new VIDENE facility, now under way, goes into operation. But the time to investigate is now.

AN INVITATION:

We invite all manufacturers and engineers who feel this development may change the face and better the competitive position of their product group, to write for full VIDENE *information.*

Goodyear, Plastic Film and Sheeting
Sales Dept. Q-8727, Akron 16, Ohio

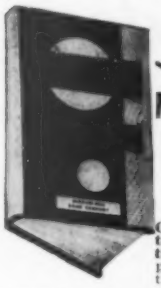
60th ANNIVERSARY

YEAR

Videne, a Polyester film—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

HIGH-SPEED DATA PROCESSING

Just Published—Shows you the important principles and techniques for processing data at high speeds. Covers the three main aspects of the subject: machine descriptions, coding and programming, and business applications. A hypothetical machine is used as a model to give the fundamentals of all data processors, how they work, and how to use them. **By C. C. Gotlieb and J. N. P. Hume, both of U. of Toronto. 352 pp., 6 x 9, 76 tables, 83 illus., $9.50.**



MANAGEMENT GUIDE to ELECTRONIC COMPUTERS

Gives management factual, realistic information on electronic computing systems — what these machines are, their advantages and disadvantages, and what results can be anticipated through their use. Outlines complete program for deciding whether or not to acquire an electronic system and for making the transition from present methods to electronic procedures. **By Wm. D. Bell, 401 pp., 6 x 9, 92 illus., $6.50**

ACCOUNTING and the ANALYSIS of FINANCIAL DATA

Just Published—Explains how accounting and financial forms and reports are interpreted by businessmen to reach more profitable decisions. Thorough explanations of accounting procedures, what forms and types of reports to use, what to look for when analyzing this material, and accounting techniques for such special fields as sales, product costs, and taxes. **By E. E. Easton and Byron L. Newton, both of Oregon State College. 449 pp., 6 x 9, 80 charts and tables, $7.00.**

JUST OUT

BUSINESS CYCLES and ECONOMIC GROWTH

Just Published—A systematic explanation of the growth of demand and the causes of fluctuations. Includes a detailed discussion of **what determines** investment and consumption. **The author** analyzes the influence of corporate financing on business investment and the relation of competition to investment. Clearly shows the causes of past business fluctuations, especially the depression of the 30's. **By J. S. Duesenberry, Harvard U. 341 pp., 6 x 9, $6.50**

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In Washington

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AEC Announces Proposals to Build Reactors for Public Power Agencies

Chmn. Lewis Strauss of the Atomic Energy Commission is readying himself to meet Democratic criticism that AEC's power program is lagging.

Strauss has announced tentative approval, after two years of negotiation and study, of arrangements under which AEC will build two atomic reactors for sale of steam to public power agencies at Elk River, Minn., and Piqua, Ohio.

• AEC has notified the Joint Committee on Atomic Energy that it has reached a basis for agreement with the Nuclear Products-Erco Div. of ACF Industries and the Rural Cooperative Power Assn. of Elk River for construction of a 22,000-kw. boiling water reactor fueled by a mixture of thorium and uranium oxides. AEC would provide $11,450,000 for the project.

• The commission's agreement with the city of Piqua and the Atomic International Div. of North American Aviation calls for $13.2-million in federal aid for a 12,500-kw. reactor moderated and cooled by a high boiling point hydrocarbon.

Congress has authority to reject the proposals.

Strauss has been accused by Democrats and the National Rural Electric Cooperation Assn. of dragging his heels on getting these projects under way. Congressional sources don't believe it's any coincidence that AEC clearance comes on the eve of joint committee hearings into the commission's program. Strauss, in refuting claims that a "crash" program is needed, also is expected to cite AEC's recent proposal to help the Carolinas & Virginia Nuclear Power Associates build an advanced type reactor.

• • •

Highway Boss Tallamy Proposes Tough Rules On Locating Billboards Along Highways

The new rules regulating the number and placement of billboards along the 40,000-mile interstate highway system will be extremely tough if Highway Administrator Bertram D. Tallamy has his way. Tallamy's proposals haven't been made official yet, but they were the hottest topic of conversation at a meeting of state highway officials last week.

This is what Tallamy suggests:

Only official highway signs would be permitted within two miles of any interchange; within this zone, no private billboard would be allowed on the 660 ft. of private property that lies on either side of the highway right-of-way. **A limited number of advertising signs would be permitted in the 660-ft. regulated area for a two-mile stretch along the highway beginning at the outer limits of the two-mile interchange zone.** But only a business located 12 highway miles or less from an interchange would be eligible to erect such signs. Erection of advertising signs would be confined to this two-mile stretch. Such regulations would apply only to rural mileage and not to urban areas.

A set of billboard regulations will be issued shortly by Commerce Secy. Weeks, under a controversial section of the anti-recession highway law. States that comply with the regulations will get an extra chunk of federal highway construction money.



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IN A NOISY UNIVERSE!

Philco eliminates unwanted cosmic and terrestrial noise.. with advanced crystal research!

The jumble of unwanted sounds that scientists call *noise*, has always put a practical limit on the effective use of radar, microwave and radio. Natural radiation and inherent equipment noise tend to block electronic amplification of vitally important communications signals at high frequencies.

Philco research scientists, working towards practical solutions to this problem, have achieved tremendous success with advanced semiconductor crystals. As early as 1954, Philco produced perfect crystal structures which reduced noise as much as ten times below any other known level . . . and Philco is still a leader in this important scientific area. Here is another example of Philco leadership . . . engineering capacity to solve the most complex problems.

To meet the challenge of advancing technology, support the rapid expansion of scientific education. At Philco, opportunities are unlimited in electronic research and engineering—transistor circuit applications—computer logic design, test and evaluation and input/output equipment design.

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GOVERNMENT & INDUSTRIAL DIVISION

4704 Wissahickon Ave.
Philadelphia 44, Pa.



GEODESIC section, in prefabricated steel, swings into place at huge dome built in Baton Rouge by Union Tank from Fuller designs.

Fuller's Domes Catch On at Last

"If we ever build a base on the moon, you can bet it will be roofed over with a Fuller dome."

This vision of the future comes from an engineer who happened to be present recently when a Marine helicopter hoisted a hangar-sized Geodesic dome off a field and spun it away beyond the horizon. Geodesic domes—just about the lightest rigid structures ever made—are the most successful product of 25 years of uncompromising iconoclasm in engineering and design by the controversial R. Buckminster Fuller (cover).

• **Down to Earth**—In the last two years, industry has discovered that Fuller's domes make a good deal of sense earthbound, as well as on the moon. His once visionary theories have suddenly found lots of backing. More than 70 companies have signed up for licenses under Fuller design patents—and these include two very large companies indeed. Kaiser Aluminum & Chemical Corp. is mass-producing aluminum domes, and Union Tank Car Co. has just completed a dome in Baton Rouge, La., that is probably the biggest free-span building now standing (pictures, above and page 124).

Other concerns are using Fuller's design theory to make things from children's jungle gyms to military shelters and Arctic radomes. This year, more than $5-million worth of Geodesic domes will rise, and if several other big projects move from planning to production, the dollar value will zoom far higher. Homasote Co. in Trenton, N. J., plans a fiberboard building called a Domasote, and Pease Woodwork Co., Inc., a big home prefabricator in Hamilton, Ohio, is giving significant backing to a venture known as Plydomes, Inc.

Since Fuller has tight patent control, he will collect royalties on all these applications of his theory.

I. Comprehensive Designer

Buckminster Fuller has waited some 30 years for his work to reach this stage of commercial success. In 1927, he abandoned the business of building prefabricated structures with his father-in-law, James Monroe Hulett, a top architect and educator, to devote full time to his own radical theories of design. Ever since, Fuller has been a center of storm.

Detractors have branded him "the man with dome house fixation," a designer of impractical "living machines" who wants to "plug people into the landscape," and even "failure-prone." On the other side, some architects, engineers, and educators credit Fuller for contributing more fresh thinking to technology than any other living man. Besides his remarkable dome structures, he has developed a new system of structural geometry and a mine of other inspiring new ideas.

• **Background**—Both sides can find ample evidence for their opinions. Fuller is certainly not a success on the profit and loss statement—yet. He has supported himself and his family with a

No. 5 in a series

Right off the Wire

An automatic ultrasonic welder makes tack welds without heat at the rate of 200 inches per minute.

Miniature mercury lamps are being used in batteries of twelve for night aerial photography. An area of sixteen square miles can be lighted from an altitude of 20,000 feet.

A new electron microscope permits the examination of opaque specimens.

An electronic converter makes any radio an appliance timer.

A three-year test of a 43,000-pound ship's propeller made of nialite (nickel-cadmium bronze) shows no wear caused by erosion or cavitation.

D. W. Kitchin and O. S. Pratt of Simplex recently made two major discoveries in studying corona spaces in cables — one, by observing internal pressure decrease, and another by mapping with silver cyanide solution.

A distillation column sixteen feet high and made entirely of glass is said to be the world's largest. It will be used to make silicon carbide with impurities of only one part in ten billion.

It has been demonstrated for the first time that petroleum is a colloidal dispersion. This knowledge may help in obtaining greater recovery from existing oil reserves.

A giant machine to hold large assemblies for welding can lift, tilt and rotate weights up to forty tons.

A tiny photoflash bulb is said to give the same amount of light as one four times its size. It uses zirconium rolled to foil gauge.

Over 1300 industrial concerns in this country are now using radioactive byproducts. About 200 were added to this list during the last year.

Air power for generators in remote installations, such as aids to air or marine navigation, can be supplied by a modern windmill which has a thirty-foot, three-bladed "propeller." It maintains constant speed.

Temperatures as high as 3500°F. are resisted by a new molded plastic.

Polyethylene is now made with an ultraviolet inhibitor and is said to last four times longer than the unprotected form.

Further information on these news items and on Simplex cable is available from any Simplex office. Please be specific in your requests.

Nuclear reactors may be used as economical sources of heat to convert coal into gaseous or liquid fuels.

A stereo cartridge to play the 45-45 Westrex groove records is in production.

South Carolina is putting its automobile drivers' licenses on photosensitive, anodized aluminum. They will be used for four years.

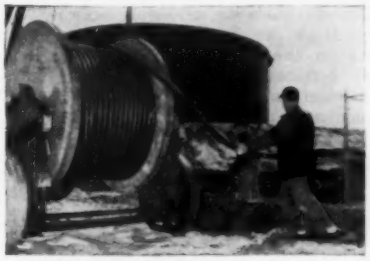
Speeds of 15,000 miles per hour and temperatures as high as 18,000°F. can be reached momentarily in a new wind tunnel being built to test missile nose cones.

"Silicone Insulation as Applied to Wire and Cable" is the title of a research paper by P. H. Ware of Simplex. This insulation is trade named "Thermoplex".

Flexible tanks of rubberized fabric are being made for use in the oil fields. They hold 15,000 gallons, but can be rolled into a package eight feet by two and one half feet when empty.

Kraft paper, shrunk after forming, is being used for shopping bags and multi-walled sacks. It stretches under tension and is said to be twenty per cent stronger than papers now in use for this purpose.

A portable scale that needs no pit is made for roadside weighing. It can handle vehicles sixty feet long weighing seventy tons.



Protection plus

C-L-X (sealex) is a continuous, lightweight, exterior metallic cable sheath recently introduced by Simplex. Impervious to gases, chemicals and water, C-L-X is ideal for almost any installation including aerial applications, industrial distribution and direct burial, as shown above. Practically any type of cable core can be used for such applications as power, control, signal and communication installations.

Other features include extreme pliability, ease of handling, long life, easy installation and relocation, and color coding for voltage or circuit identification.

SIMPLEX WIRE & CABLE CO.
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Highest quality cables for: Mining
Power & Lighting • Construction
Transportation • Communications
Signalling

"The American manufacturers of transoceanic telephone cables"

Businesslike in Operation... Economical in Maintenance—

JOHN DEERE Industrial EQUIPMENT

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succession of jobs that almost defy classification. To name a few, he has been a research consultant for Phelps Dodge Corp.; researcher for American Radiator & Standard Sanitary Corp.; an editor and publisher; a conventional builder; a naval officer (during World War I), and chief of the Board of Economic Warfare's mechanical engineering section (during World War II). In postwar years, he has lectured and taught on a back-breaking schedule that includes more than 60 colleges and universities.

It's almost impossible to categorize Fuller except in such improvised terms as technologist-philosopher. He tends to think of himself as a "comprehensive designer" rather than as an architect. Sometimes, he shrugs off persistent questions with: "Officially, I'm a machinist." That stems from an apprenticeship he put in with cotton mill machinery makers, after he "was expelled from Harvard—officially for cutting classes but actually for general irresponsibility."

• **Dymaxion's Man**—Fuller's description of himself as a "comprehensive designer" is probably as close as anyone can come. He struck out on that course in 1927, repulsed by what he considered the lack of efficiency and foresight in the building industry. He decided then something of which he is still convinced: It will be impossible to shelter coming generations efficiently unless modern concepts of construction methods and use of materials are introduced into building. He advocates using high-strength, lightweight materials as efficiently in building as they are in shipbuilding and aircraft.

Fuller by no means confines his ingenuity to building. He designed and produced a radical automobile of superior working order; in 1927 he produced a working model of a vertical take-off aircraft of the flying-bedstead type, powered by jets; and he designed and produced an improved projection for global maps.

To Fuller, all these accomplishments are related in that they all stem from his almost fanatic adherence to the concept of adequate preplanning and design—which he calls Dymaxion. Dymaxion, compounded from "dynamic" and "maximum," implies to Fuller "the maximum gain of advantage from minimum energy output." He applies this to his houses, which are lighter and use materials more efficiently than the ordinary, and which, he is sure, would be cheaper, too, if they were mass-produced; to his industrial domes, and to all his other projects.

• **Source of the Mystique**—Fuller traces his almost mystical devotion to technological preplanning to his early life in Maine, where his aunt, Margaret Fuller, edited the transcendentalist



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magazine Dial. One of her colleagues had been Ralph Waldo Emerson. That environment, plus a fascination with the activities in Maine boatyards, steered him into his career.

Since then, Fuller has always been attracted to systematizing. Ballistics and logistics studies in the Navy started some of his most profitable ideas, such as air-transportable shelters. He does much of his own engineering in his own system of "energetic geometry," a sophisticated type of spherical trigonometry that is particularly good for handling stresses and energy flow, torsions, torques, and irregular truss systems.

Fuller's predilection for systematic ideas has led to activity with the general semantics groups. In large part, though, this particular interest may come from his own difficulty in communicating as clearly and rapidly as he would like. He has an endless flow of ideas coupled with limitless curiosity. Typically, he bubbles over with a mixture of engineering jargon, his own shorthand expressions, and sesquipedalian words.

All this makes Fuller difficult to evaluate or compare with others of his breed. His ideas are in direct opposition to those of Frank Lloyd Wright (though both call their architecture "organic"), yet he has Wright's iconoclasm, independence, and stubborn integrity. As an inventor, he is a tinkerer and master mechanic in the Kettering mold, yet he relates his tinkering to an over-all philosophic discipline—his ideas about energy conservation and efficiency.

• **Research Only**—Fuller does his work chiefly through two concerns he has founded in Raleigh, N. C.—Geodesics, Inc., which specializes in military projects such as radomes and air-transportable shelters, and Synergetics, Inc., which does commercial design and prototyping. The personnel roster numbers only about 30, including students. Fuller considers them exclusively in the business of doing research and testing prototypes—and even if royalties of his Geodesic domes increase dramatically, he plans to keep them that way. So far, operating expenses have come mostly from Fuller's own pocket and from design fees and royalties. Most, if not all, future earnings will go into advancing his design concepts, he says.

"We'll build only what others won't," he declares. This isn't so impractical as it might sound. "Usually," he adds, "the moment a design is finished, somebody buys it."

II. Fuller's New Fans

From initial performance records of two of the latest Fuller designs to go into production, it looks as if his companies won't go begging for future cus-



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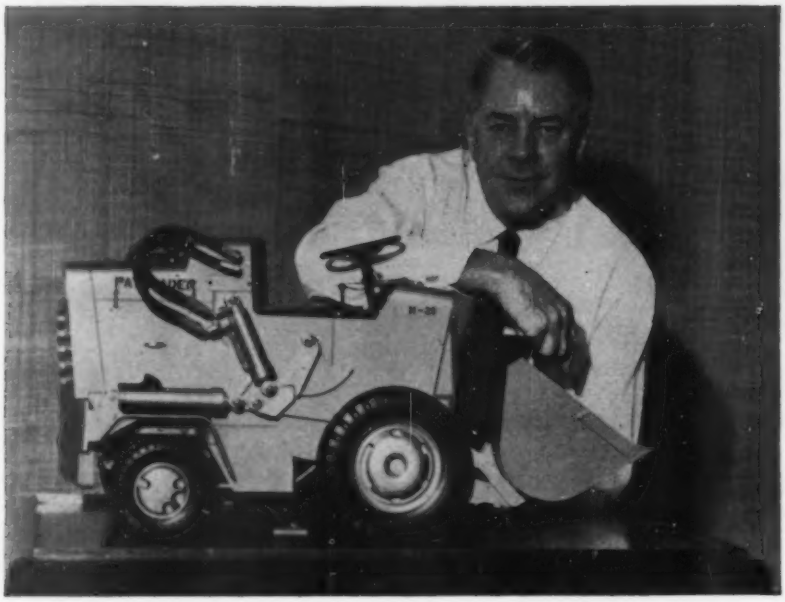
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tomers. The projects to watch are Kaiser and Union Tank.

Kaiser's domes are big, spherical aluminum sections made up of hundreds of panels bent from diamond-shaped sheets about 5 ft. on each side; they go up so easily that a crew can flip one up in a working day once the foundation has been prepared. And the foundations themselves are bargains. Unlike other arched forms, the domes are so light and self-supporting that no heavy buttresses or foundation crossties are needed. But, says a Kaiser engineer, "You have to be careful to fasten them down. They develop considerable lift in a gale."

Kaiser construction men are still dazzled by the speed of construction. Even the first dome, built for Kaiser's Hawaiian Village Project (BW—Feb.2 '57,p75), was a shocker. Henry Kaiser himself wanted to watch it rise; so he hopped a plane from San Francisco when workmen started assembling it. By the time he arrived in Honolulu, it was finished. Another dome, in Texas, was erected in a day by building it in sections atop an inflatable bag.

• **Domes in Every Town**—Henry Kaiser predicts he can sell a dome to every U.S. small town that needs a community center. "That's about 10,000 domes, and it sounded like tycoon talk to me at first," says R. J. Hume, head of Kaiser's new Dome Sales Dept. in Chicago. "But I've been all around the country since then, and with actual cost figures at hand it looks as if it's not a bad prediction at all."

Since the first dome in Hawaii, Kaiser has built six more in the U.S. The last two went up just this week—one for a bank in Oklahoma City, the other in Fort Worth. "Two more are definitely planned in San Diego and Caracas, Venezuela, and we have pretty firm proposals for about 30 more," says Hume, "plus several hundred reliable and serious inquiries. We're negotiating with one oil company for some radically new service stations and for airport terminals, bowling alleys, and a lot of community centers and theaters."

Hume has projected sales at an annual rate of about 250 domes, in six sizes by yearend—at a price of $250,000 to $750,000 each, including all finishing, plumbing, and interior details.

• **Another Addict**—Union Tank Car Co. is no less enthusiastic than Kaiser about Geodesic structures. Several years ago, UTC was looking for a way to construct a car rebuilding and reconditioning plant with at least 350 ft. of free span without bays or pillars. Richard Lear, UTC's construction engineer, noticed a magazine article about Fuller's domes and brought it to the attention of Pres. E. A. Locke, Jr.—who happened to know Fuller personally.

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bubble ballooning from a Baton Rouge field—with a span of 384 ft., raised 128 ft at the center. Locke claims the cost was "quite a bit less than $10 per sq. ft.," decisively cheaper than most comparable structures. The next one—already taking shape for UTC in Wood River, Ill.—will cost a lot less, Locke says, because at Baton Rouge "we had to feel our way as we went along." The company plans other domes for its Canadian subsidiary.

To UTC, domes look like a good product to make and sell to others. The company has been expanding fast; in 1957 it acquired Phoenix Mfg. Co. and Graver Tank & Mfg. Co. to integrate its manufacturing operations. Locke has already established a dome department and is investigating the market.

• **Hurricane-Proof**—In the meantime, Locke gloats over the Baton Rouge project. "This type of structure has an incredible quality of spreading stress and strain," he crows. "It will withstand hurricane winds, yet it's made of common ¼-in. steel sheet and ordinary pipe. . . . The foundation is simple, too. Since the dome has only vertical thrust, it doesn't need side bracing except for wind loads. And think of this: The entire bill of materials for the building included only eight items."

The Baton Rouge dome has a floor area of 115,558 sq. ft. and cubic footage of 15-million, but it tilts the scales at a scant 1,200 tons. So the foundation need only support a load equivalent to a 15-ft. concrete wall a foot thick. Or, looking at it another way, the dome uses material so efficiently that it takes only 2 oz. of structural weight for every cubic foot of space it encloses.

III. Fuller's Theory

Geodesic domes can do tricks such as that because they are built on quite a different principle from conventional construction. Architects and engineers generally design around compressive forces, because most building materials, such as stone, have high compressive strength. Geodesic structures, however, make more use of tension. They have a framework of struts or stressed skin panels designed to hold each element in an equilibrium of tension and compression. A suspension bridge is somewhat similar, but it usually needs the earth for structural support—and Geodesic designs don't. They can be lifted right off their foundations without changing shape or collapsing.

It takes a lot of engineering to compute the forces determining the proper size for structural elements, the angles at which they are to be attached, and what sort of framework to use. James W. Fitzgibbon, vice-president of Synergetics, Inc., claims Fuller's

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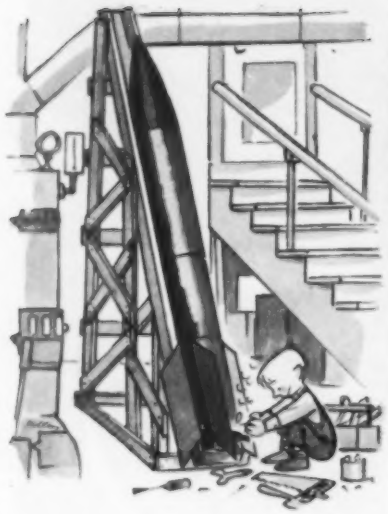
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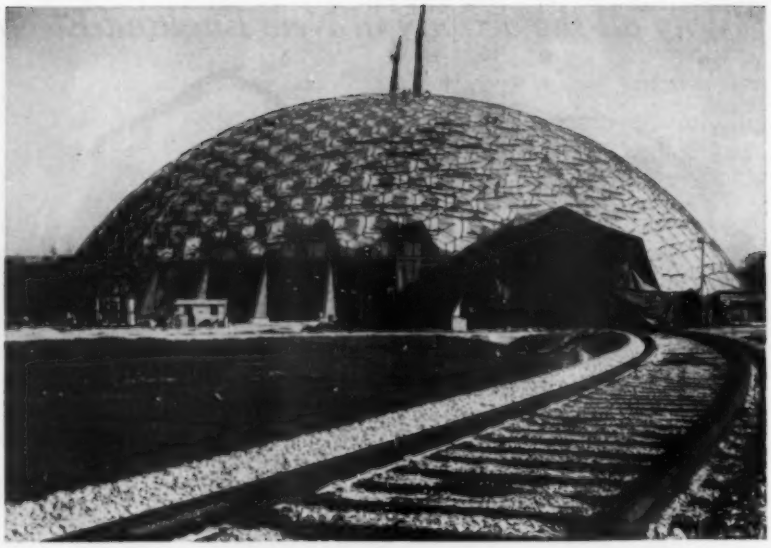
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UNION TANK'S Baton Rouge dome is the biggest free-span building in U. S. Company uses it for freight car rebuilding and reconditioning, is building another in Illinois.

"energetic geometry" makes the job easier. "Using ordinary techniques," he says, "it would be hard or impossible to predict the behavior of the entire structure from the strength and location of the individual components."

• **Two Forms**—The domes are designed as developments of two basic geometric forms—the sphere, which is the most efficient container of volume per square foot of surface area, and the tetrahedron, which is the simplest rigid structure. A Geodesic sphere is a framework of struts arranged in triangular fashion and figured mathematically to equalize stresses.

With this technique, domes can be made from a relatively limited number of different parts—which makes them ideal for prefabrication. Synergetics classifies its domes according to the number of different-sized parts that go into them. For example, a two-frequency dome has pieces of only two different sizes; a 36-frequency dome (such as UTC's) has 36. Actually, a dome may contain a few more parts than this would indicate, because a few special sections are needed where the dome hits the foundation. Otherwise, there would be a jagged edge.

For each size dome, separate calculations—costing $10,000 to $12,000 for a dome 150 ft. in diameter—are needed. But, of course, these can then be used over and over again in mass production.

IV. Theory Into Practice

When Kaiser decided to apply Fuller's Geodesic theory, it hired one of his top proteges, Donald Richter, to direct the design work. Then it built the first dome directly from theory. "We weren't at all sure how it would turn out," confesses Hume. "Kaiser domes weigh only 3 lb. per square foot of floor space, but they are designed to support over 100 lb. per square foot of dome area." Engineers at Kaiser put the first dome through tough physical tests on the site to see if the design held up in the field as well as it did on paper. "I don't have to tell you," says Hume with a grin, "that the results came out right smack on the nose of the theoretical predictions."

With the basic formula worked out, Kaiser can grind out dome specifications for any size dome on electronic data processing equipment. Still, IBM time is so expensive that the company doesn't show much interest in a project unless it can get at least several orders for the same size.

• **The Future Is Here**—Both Kaiser and UTC are at work on other Geodesic projects—but they won't talk about details. Both seem to sense they are on to something at the same time hot and practical. "We know these things aren't toys," says Hume. "A couple of years ago, Geodesic structures were only exercises for architecture students dreaming about the future. We added the stressed skin idea, put in a lot of engineering and capital, and the paper stuff turned into practical buildings. They aren't in the future any more. They're here, and our salesmen can give you costs down to the penny. We think they are too much of a bargain to overlook."

The latest figures on construction costs support Hume on this. The gold and black anodized dome of the new Oklahoma City bank building is run-



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V. The Future Fuller

Fuller insists that, except for what he and his students are doing, there is little or no basic research in progress on shelter problems. With his domes as an example, he contends that it takes about 27 years for an innovation to take effect. Since it was about 30 years ago that he developed his octet truss, from which the domes were later derived, he thinks the domes are right on schedule.

As for the future, Fuller is as outspoken now as when he first formulated his Dymaxion theories. He still preaches, for example, that houses should be disentangled from sewers (he has designed a recirculating water system to burn waste products for heat) and from long mortgages. To his way of thinking, a house is something you should plug in like a telephone.

• **Invisible Buildings**—On his drawing boards at Synergetics, Inc., are such things as a triangular dome section for the Cleveland headquarters of the American Society for Metals. This dome will span a whole complex of buildings, with a lacy Geodesic filigree as decoration.

"In my office," he revealed in a recent talk, "are preliminary designs for Geodesic domes up to a mile in diameter and half a mile high. Our calculations show that the structural elements of such a one-mile dome would interfere with vision only half as much as the wire in a window screen viewed from the center of your living room. With glass or plastic skins, the structure of such a building would be invisible to a person standing at the center."

But before he builds invisible buildings, Fuller expects to be making smaller domes to cover houses completely. They would keep out insects, rain, and bad air, he claims, and make the house much more efficient to heat and cool.

• **Globetrotting**—Fuller will get back to work on this idea when he returns from a worldwide lecture and teaching tour next fall. Right now, he's busy teaching at four South African universities, where students raised money among themselves to bring him over. On the way, he stopped in Tokyo, Bangkok, Rangoon, New Delhi, Calcutta, Bombay, Karachi, and Nairobi for one-night lecture stands sponsored by the State Dept. "Bucky" Fuller believes in efficiency—he's not a man to settle for one project if he can take on two, even on a world tour. **END**

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The Fear That Paralyzes Policy

Behind the peculiar irresolution of U. S. government economic policy in the face of our most serious postwar recession lies one fundamental cause: fear of inflation. If the consumer price index would just oblige conventional economic thinkers and move down with lower demand and business activity, it would almost certainly remove this principal inhibition to more forceful government action to combat unemployment and economic stagnation.

But the price level continues to defy what some call "the law of economic gravity" by creeping steadily upward. To a number of the contributors to the Joint Economic Committee's illuminating symposium on prices, economic stability, and growth (page 36) this development means that there have been serious deficiencies in our understanding of economic "laws." In America's huge industrial economy, prices simply do not show the downward flexibility in periods of recession that had formerly been supposed.

To be sure, the government could succeed if it adopted still sterner policies for the purpose of breaking the price trend (such as raising taxes, as Bernard Baruch has proposed). Indeed, even without adopting harsher anti-inflationary policies, it's still possible that the recession will be long and deep enough to do the job. At some point, if the downward course of the economy continues, distress liquidation of inventories will set in, and the general price level will start to tumble. But this event, we feel sure both on the basis of past experience and on examination of the present structure of the American economy, would be the decisive factor that would produce cumulative cutbacks in business activity, and turn this recession into a full-fledged depression. There can scarcely be anyone left—however conservative—who would view such an outcome as anything but an unmitigated catastrophe for the nation. It would be a catastrophe in terms of human suffering, political chaos, or radical change in our present political-economic system, and in highly probable ruinous effects to the international strength of America and the free world.

We do not expect such a disaster. But it is not so impossible that we can deliberately risk it for the purpose of achieving stable prices. Creeping inflation is an evil, beyond doubt, but a lesser evil than that of serious and prolonged economic stagnation. And, though the risk of an economic collapse may not be great now, the risk of a period of a few years of economic stagnation is anything but remote today. Such stagnation would mean more unemployment of both men and resources and less growth than we need to maintain our political, economic, and military lead over our Communist enemies. The U. S. simply cannot afford to risk such stagnation. This nation is in its most crucial fight since its foundation. And this is a far more complex fight—with heavier emphasis on economic strength—than even our World War II crisis.

The major objective toward which we must work today is economic growth. Reasonable price stability is an important but secondary objective now.

There is no evidence, as the Joint Economic Committee's symposium demonstrates, that economists yet have a completely sound and workable solution for simultaneously achieving all the main objectives of economic policy—steady growth, high levels of employment, and price stability—or that the means to effect the solution exist, even if one knew for sure what it was. Meanwhile, let's put first things first and get the economy back to work and growing again, and, in that context, try to fashion better remedies for creeping inflation. When a patient has both double pneumonia and hives, you can neglect the hives until you get him out of the oxygen tent.

Kill the Umpire

In the midst of all its other business, Congress is considering proposals to curb the powers of the Supreme Court and reverse some recent decisions.

This is not the first attempt at weakening the power of the judiciary. But for the most part, such efforts have been defeated on the grounds that they threaten the separation of powers which is the foundation of our democratic system.

Congress itself blocked the last effort to weaken the judicial arm. That was when Pres. Roosevelt sought to pack the Court after it had declared some of his legislation unconstitutional.

Now it is Congress that is attempting to punish the Court. Its legislation is designed to free Congressional investigating committees from court restrictions as well as to prevent the Supreme Court from reviewing state bar admissions.

This is an undisguised attack on the judiciary. Atty. Gen. William P. Rogers has described it as a "kill the umpire" attitude. Calling on the public to support the courts, he pointed out the dangers of "a subservient or timorous judiciary."

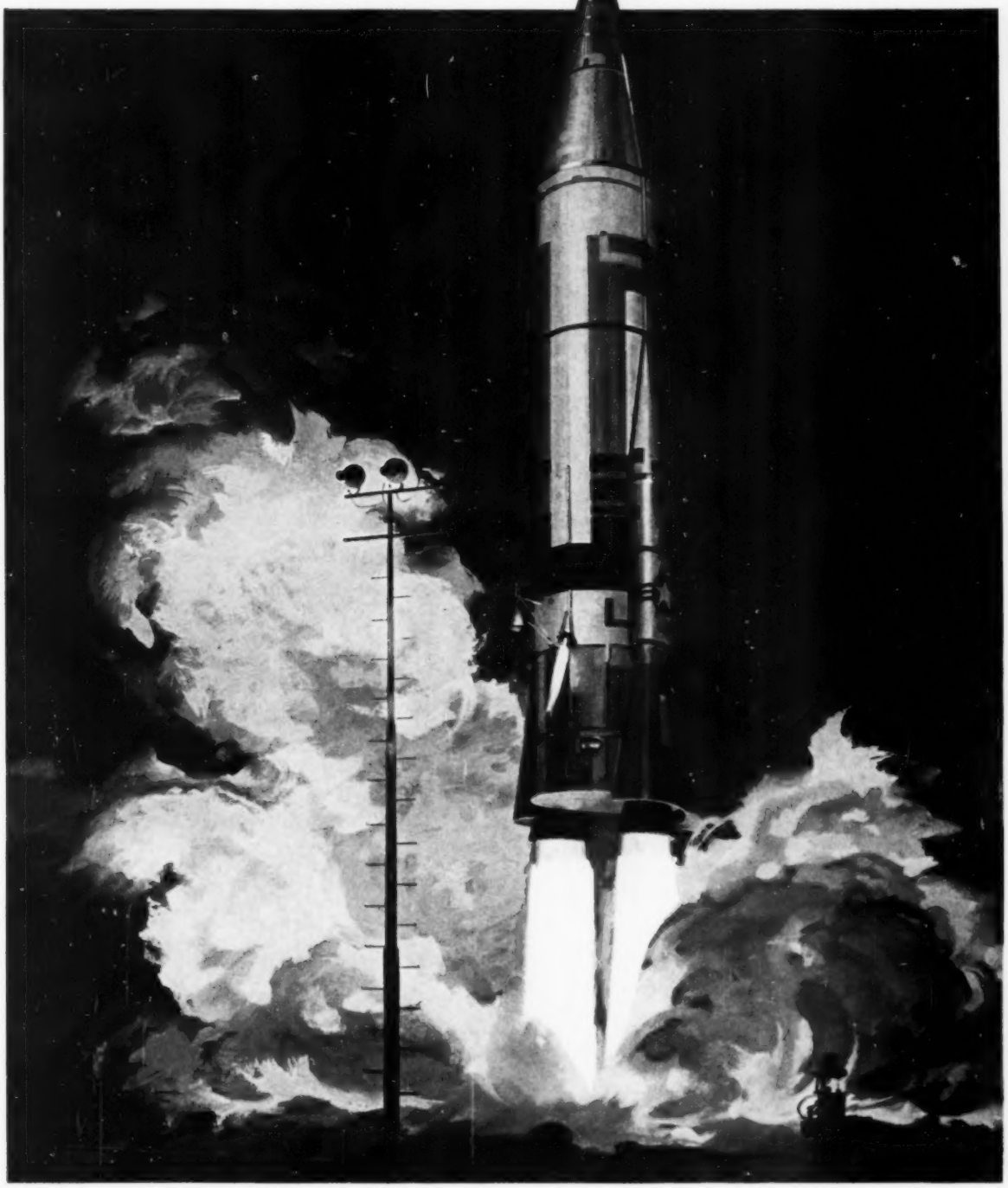
Rogers' own Justice Dept. has suffered some notable defeats at the hands of the Court. But he recognizes that an independent judicial arm is essential for safeguarding our freedom.

The business community has every reason to take the same position. It, too, has sometimes been curbed by the courts. But in the long run, the checks and balances inherent in the separation of powers have averted abuse by any one arm of government.

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